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Original Articles.

PERFORATED ULCER OF THE STOMACH AND DUODENUM.*

BY ELLIOTT C. CUTLER, M.D., BOSTON,
AND
FRANCIS C. NEWTON, M.D., BOSTON.

[From the Surgical Clinic of the Peter Bent Brigham Hospital, Boston.]

Perforated ulcer of the stomach and duodenum has long been a subject of much interest to surgeons, especially to those whose hospital practice permits them to see a mass of emergency surgery. The immediate prostration occurring in such cases is always alarming and, though the indications for opening the abdomen are usually adequate, the exact site of the actual lesion is not always easy to predict, and a misplaced primary incision may cause unwise delay and added trauma. The fulminating type of peritoneal irritation, in these cases chiefly due to chemical not bacterial insult, may be exactly reduplicated in cases of rupture of the appendix or gall-bladder or in the rare case of acute pancreatitis. In addition to the difficulty attendant on making an accurate diagnosis, is the further one of what to do with the exposed lesion once it is found. The arguments for and against simple closure of the opening, closure plus gastro-enterostomy, and the added question of drainage have long been submitted to us in the literature. At the same time with this opportunity to present a little more evidence, we may well rehearse such facts as are proven to us by the most recent statistics.

To Jacopo Penada[9] of Padua, born in 1748, belongs the credit of first describing the history and findings in a case of perforated ulcer of the duodenum, although the descriptions of the death and autopsy of Henrietta, daughter of Charles I of England in 1670, are sufficient to prove a ruptured gastric ulcer as the probable cause of her death. In this latter case, a large amount of oil was given previously, as the necessary remedy! In a volume of 146 pages published in Padua in 1793, Penada devotes 23 pages to the description of a single case, with autopsy, in which a perforated ulcer of the duodenum was shown to be the cause of death. His patient, a butcher of 35 years, of great physical power, addicted to rough living and strong wine, suffered from attacks of epigastric pain following meals for 26 days before death. These attacks continued up to three days before demise, when the patient was suddenly seized with excruciating pain, which rapidly spread over the entire abdomen. Post-mortem examination revealed a generalized peritonitis with

*Read before the Hartford Medical Society, November 17, 1922

fibrin covering the under surface of the liver and its neighboring viscera, an empty stomach, and in the duodenum, four fingers' breadth from the pylorus, an opening measuring eight by two Parisian lines, which is described as resembling a peculiar morbid ulcer with some induration at the edges and a reddening of the tissues surrounding it. (Fig. 1.) In summing up the evidence at hand, Penada concluded that it was absolutely impossible to localize and identify in the living such a disorder. *"Ecce sub oculis Domini res facta!"*

One hundred and thirty years later, experience and study have so advanced our knowledge that one could with fair presumption correctly diagnose Penada's case, since there existed a period of 23 days before the acute manifestations occurred in which the association of epigastric pain with meals was practically pathognomonic. Unfortunately such a story is not the rule and the collapse associated with a perforated ulcer may strike down the patient without previous warning of any kind. This is particularly true of such lesions in the duodenum, ulcers of the stomach more often giving some premonitory symptom.

These cases may be divided into acute perforations, those in which there is usually very little warning, and subacute perforations or chronic ulcers with perforation. The border line between the two groups is, however, most indefinite, and in many a case of acute perforation in which no premonitory symptoms were elicited in the usually hurried story previous to operation, a later and more deliberate questioning will bring out a vague story of some form of indigestion. Moreover, these chronic ulcers rarely perforate in the sense that they cause a widespread general peritonitis. The usual course of a chronic lesion that has penetrated to the serosa is that long before it has reached that membrane the zone of infection which precedes the actual ulcer has caused a localized reaction with peritonitis that glues the nearest viscera to this spot in advance of the destructive lesion. Thus, when the ulcer has reached the limiting peritoneum, it finds it is abutted by another viscus. As a result, surgeons frequently find

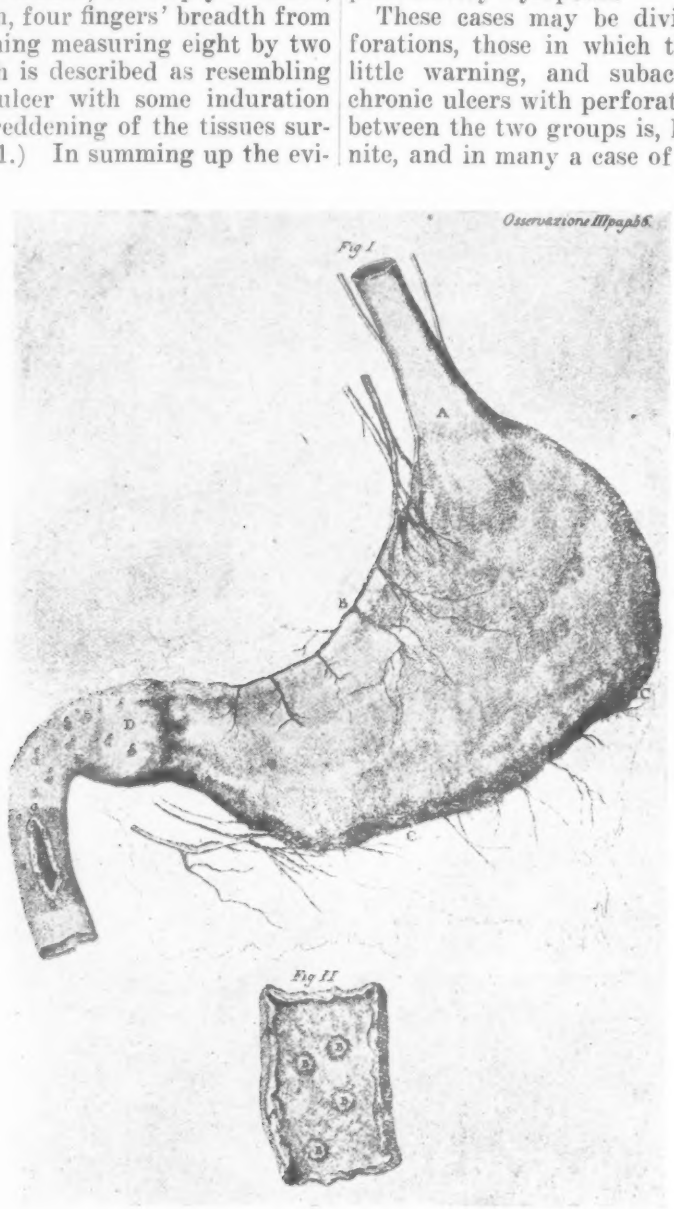

FIG. 1.—Reproduction findings in Penada's case.

that in separating the duodenum or stomach from the liver or colon or omentum in cases of chronic ulcer, there is suddenly a gush of gastric or duodenal contents and an ulcer is exposed which has already penetrated the bowel and which, but for the neighboring viscus, now torn away, would have long since brought their patient to the operating table. It is such a process that in due time may be behind a previously unexplained subdiaphragmatic or liver abscess.

It is our intention to limit this paper to a consideration of the first group mentioned, those in which general peritoneal insult is the outstanding feature. Perhaps it will be more clear if we illustrate here with a typical case history.

M. C., a married blacksmith of 35, was brought to the hospital 18 hours after an attack of severe epigastric pain. Family history and past history negative. He had worked at his occupation consistently without ill health for years. There had been no complaints and direct questioning revealed no story of indigestion or previous abdominal disorder. Twenty-four hours before the attack of pain, he had taken a licorice powder because of a headache in the evening. The next morning the bowels moved twice yet the headache remained for a time, wearing off while he was at work. That evening while sitting quietly at home, he was seized with violent, agonizing, epigastric pain. The pain was more marked on the right side and was so severe that the patient was at once prostrated. The local doctor gave castor oil and some tablets which had no effect either for better or worse. There was no vomiting. The following morning he was brought to the hospital.

The physical examination showed an extremely vigorous appearing man evidently suffering great pain. The facies were anxious and cyanotic, respirations rapid and entirely thoracic, temperature 101.4, white count 12,000, pulse 80, regular and full, blood pressure 112 systolic, 65 diastolic. The abdomen was scaphoid, with musculature visible in spasm and to palpation board-like, with less spasm and tenderness on the left. No difference was apparent on the right side between the upper or lower quadrants; rectal examination was inconclusive. A diagnosis was made of ruptured duodenal ulcer, which was substantiated at operation.

We have purposely chosen in this recital of a case the type where there has been no preceding distress, no warning of any kind. We do this, not because such cases are the rule, since certainly more than one-half and perhaps two-thirds of all free perforations do give some premonitory symptoms, but because such cases when they do occur are more apt to be the source of difficulty in diagnosis.

A review of the literature at the present time reveals a few outstanding facts. First, such perforations are strikingly more common in males (Deaver,[3] 54 to 1, Richardson,[12] 78 to 22, Winslow,[17] 27 to 2, Walker,[16] 72 to 6, Pool,[11] 58 to 1). Second, about 90 per cent. of the ulcers are situated within one inch of the pylorus. Third, the percentage of favorable results reported bears a definite relation to the interval of time that has elapsed from perforation to operation no matter what technical method of repair is adopted. There is apparent also a quite definite tendency in the later contributions to be more radical in the operative procedure adopted. This is to some extent to be expected. In the first place, modern surgery has existed but a few decades, and the apparent fearlessness with which many of us order a patient to the table would have been impossible to a surgeon educated forty years ago, when the abdomen was still a sanctuary dared only by the few leaders in the profession. The obvious development would be that the simplest procedure be done first. Thus we find simple drainage used in the earlier days, next closure of the perforation plus drainage. Later still, such an eminent surgeon as Deaver of Philadelphia advocated closure plus gastro-enterostomy, and finally at the present time there is considerable evidence presented urging resection of the lesion with gastro-enterostomy as the most favorable procedure. Amongst all these conflicting opinions we must progress cautiously, remembering that a mistake due to omission and conservatism is just as reprehensible as one of commission and radicalism. To emphasize the more modern trend of experience, we have summarized on a chart (Chart 1) some of the studies reported.

The series of cases reported by Walker[16] comes from the Boston City Hospital records covering the decade 1905 to 1914 inclusive. This takes us back to the earlier years in which the operative treatment of perforated ulcer was used. In this series, suture of the opening plus drainage was employed in all but three cases. In these three, gastro-enterostomy was performed in addition, with a recovery in each instance. The mortality for the whole series was 26.9 per cent. In a second series from the same hospital, reported by Hepburn, covering the years 1915-1920, 119 cases were treated. Simple closure plus drainage was the procedure used in most of the cases. The mortality was 43 per cent. Yet Walker concluded that gastro-enterostomy should only be used in the rare case where the suture causes obstruction. His chief point was a demand for earlier operation, recovery bearing, in his case, a direct relation to the time interval from perforation to operation. Thus the average duration for the series was 25.9 hours; in those patients who lived, it was 14.5 hours, as opposed to 37.5 hours in those who died.

Gibson's series[5] from the New York Hospital presents a more happy picture, with but 1 death in 14 cases. A careful examination of his case

CHART I

Year	Reporter	Number of cases	Operation
1915	Walker[16]	78	Simple Closure usually (75 cases) Gastro-enterostomy in addition when suture caused constriction.
1916	Gibson[6]	14	Simple closure—13 Closure plus gastro-enterostomy—1
1917	Richardson[12]	82	Simple closure—70 Closure plus gastro-enterostomy—12
1920	Farr[4]	24	Simple closure—22 Drainage alone—1 Closure plus gastro-enterostomy—1
1920	Lewisohn[8]	10	Gastro-enterostomy plus closure—8 Simple closure—2
1921	Deaver and Pfeiffer[3]	55	Gastro-enterostomy plus closure—42 Simple closure—12
1921	Winslow[17]	29	Closure—16 cases Gastro-enterostomy plus closure—8 Simple drainage—1 Exploratory laparotomy—1, etc.
1921	Straeuli[15]	11	Gastro-enterostomy plus closure—11
1921	Sencert and Allenbach[13]	8	Gastro-enterostomy plus closure—8
1921	Brutt[2]	150	Closure plus gastro-enterostomy—140 Resection (usually Billroth ii)—10
1922	Hepburn[6]	8	Gastro-enterostomy plus closure—8
1922	Stewart and Barber[14]	24	Simple closure—24
1922	Brenner[1]	15	Simple closure—11 Simple drainage—2 Gastro-enterostomy plus closure—2
1922	Hromada and Newman[7]	19	Gastric resection (usually Billroth ii) all cases.
1922	Poole and Dineen[11]	59	Simple closure—50 Gastro-enterostomy plus closure—9
Totals		486	Simple closure—107 Closure plus gastro-enterostomy—191 Resection—29

reports, however, shows that the average duration of the perforation was but 8½ hours, and in 9 cases out of the 14 it was but 5 hours or less. Moreover, as a whole his subjects were excellent risks, and except for two patients 57 and 51 years of age, all were in the prime years of life. All were males. Follow-up studies showed some x-ray evidence of gastric stasis in 4 of the simple suture cases. He states that drainage adds little assistance and that he has discarded it.

The report from the Massachusetts General Hospital by Richardson[12] covers all recorded cases, beginning with the first one of this kind in 1896, through 1915, a period of 20 years. A total of 104 such lesions were reported, 90 of which were operated. The unoperated cases include 5 moribund on admission and 3 on whom operation seemed inadvisable. We bring this point up now since but few reports state anything concerning such cases. They do appear, however, and even in the small series in our

CHART I

Mortality	Post-operative observations and results.
26.9% (17.9% when perforation had existed 5-12 hours). (66.2% when perforation had existed 25-48 hours).	Plea for earlier operation.
7.2%	Late X-ray controls show 5 cases with some stasis.
35.5% (17% gastro-enterostomy group).	Late studies show 1 case in gastro-enterostomy group with secondary hemorrhages; 6 cases in simple closure group had a secondary gastro-enterostomy, and in duodenal ulcer group results are called good in only 55%.
12.5% (peritonitis localized in all but 2 of the 3 fatalities)	Two cases had gastro-enterostomy performed later for obstruction.
0	7 cases traced for study. 6 well. 1 case of simple closure only showed 6 hour residue by X-ray; advised reoperation.
7.2% (20% suture only group) (7% gastro-enterostomy plus suture group).	Later studies on 21 patients showed only 2 patients unsatisfactory—both had had simple closure and both returned for gastro-enterostomy.
51.72% (37.5% gastro-enterostomy group).	
41.2%	Thinks only rare case survives if perforation is over 24 hours unless a "covered" perforation.
12.5%	
40% 10%	First group—recurrence in 12% (5 with hemorrhage) Second group—O. K. Of 50 fatal cases 36% multiple ulcers, in favor of radical operation.
0	Plea for fair trial gastro-enterostomy.
8.3%	Follow-up notes="occasional pyloric impairment with 6 hour residue."
6.6% (1 death—pulmonary embolism).	3 secondary gastro-enterostomies, 2 immediately, 1 later for hemorrhage in simple closure cases.
35.7% (1 of embolism subclavian).	Late studies showed all patients reached in good condition.
18.6% (no fatalities among gastro-enterostomy group).	36 patients followed 1-6 years. 7 of simple closure cases secondary gastro-enterostomy for retention, 3 others similar symptoms.
19.4%	A fair number require secondary gastro-enterostomy.
24.3%	Some have recurred.
22.8%	All seem well.

clinic there have been 2 such patients, both of whom were refused operation because of their serious condition on admission. Richardson remarks on the preponderance in males, the sudden onset in 90 per cent. of the patients, and the tendency to confuse with appendicitis, as evidenced by the low incision in one-third of the duodenal cases. The mortality of the 82 operated cases with general peritoneal irritation was 40.5 per cent. If the 20-year period be divided, we find a mortality of 70.5 per cent. in the earlier series and of 33.9 per cent. in the later series. Richardson also points out the interdependence of elapsed time and age with recovery. Thus in 27 duodenal cases with recovery, the perforation had existed an average of 14 hours, whereas in 11 fatal cases it had been present 25 hours. Of the 82 cases, 70 were treated by suture of the perforation and drainage, 12 by an additional gastro-enterostomy, with a mortality of 40.5 per cent. for the total group and 16.6 per cent. for the gastro-enteros-

tomy series. The fact that the two deaths in the latter series were due to delirium tremens and diabetic coma does not seem to make this an especially safe group, and yet Richardson draws the deduction that gastro-enterostomy should be reserved for the safe case in the hands of the exceptional surgeon. This in spite of his own late evidence and in addition to the above data that a secondary gastro-enterostomy was necessary in 6 cases of simple suture and that he classified only 55 per cent. of the duodenal ulcer cases as good results.

In Farr's series[4] the evidence submitted is insufficient for a reader to study. His mortality figure is low. End-result studies are only stated in "about one-half" of the cases, and in 2 of these a subsequent gastro-enterostomy for stenosis was necessary.

Lewisohn[8] reports 10 cases with no deaths. Eight of these were treated by gastro-enterostomy plus suture, 2 by suture alone. Of the 7 cases traced for study, 6 were well and 1 case of simple closure showed a 6-hour gastric residue and was advised to have a secondary operation.

Deaver and Pfeiffer[3] reported 55 cases in 1921. Of these, 42 were treated by gastro-enterostomy plus suture. There was a mortality of 7.2 per cent. for the series, an enviable figure. Follow-up studies on 21 patients showed only 2 unsatisfactory results, both in cases in which simple suture alone had been performed and in whom a secondary gastro-enterostomy was advised and carried out. Deaver points out that he has favored gastro-enterostomy in such cases for 15 years, that although of course it would be unwise to perform this added risk in cases in shock, that such a condition is rare in the first 12 hours following perforation. A chart of the time elapsed in his cases shows the ascending trend of mortality with the increase of elapsed time before operation.

The series reported by Winslow[17] is a frank statement of the facts with a most disquieting mortality, 51.7 per cent. The reasons for such a high mortality are not obvious, but from a careful perusal of the case reports it appears that possibly he dealt with patients that as a whole were poorer risks than, for comparison, those reported by Gibson. Eleven of the 25 were 50 years of age or more. The only other outstanding feature is the very liberal use of drains both local and pelvic and the often strenuous irrigations resorted to to cleanse the peritoneal cavity. Of the 8 gastro-enterostomy cases, 3 died, a mortality of 37.5 per cent. in this group, as opposed to 51.7 per cent. for the whole group.

Hepburn's series,[6] though small, is very creditable, for among his patients is one aged 72. The average age was 43 and the average time-interval 9½ hours. This latter factor is largely responsible for his success, though it may be that, as he claims, the gastro-enterostomy was a factor of great importance.

Straeuli[15] stresses in his report the factor of the elapsed time since perforation, pointing out that in his series there were no deaths when operation was performed within 6 hours, that in the next 6 hours the mortality rose to 22 per cent., and that in cases treated between the 19th and the 24th hours it was 50 per cent. After a period of 24 hours he had no recoveries. He thinks that perforations over 24 hours' duration result fatally unless they are of the "covered" type.

The report of Sencert and Allenbach[13] is creditable when one realizes that the single death was due to bronchopneumonia, a well-recognized, serious postoperative complication. The cases, however, were good risks, all being operated within 8 to 12 hours from perforation. The gastro-enterostomy does not appear here as an added burden.

With the report of Brütt,[2] we enter the most modern field of treatment. After reciting 140 cases treated by gastro-enterostomy plus suture with a mortality of 40 per cent. and recurring symptoms in 12 per cent., he cites 10 cases in which resection of the area involved was performed after the Billroth II type of operation. The reason for the more radical operation was the fear that recurring symptoms in the earlier cases indicated that the ulcers were multiple and therefore some were overlooked. He also gave as further evidence of this latter condition the finding of multiple ulcers in 36 per cent. of 50 cases coming to autopsy. In spite of the fact that the elapsed time was usually more than 12 hours, all cases except the single fatality ran a surprisingly smooth course.

Stewart and Barber[14] report 24 cases from the Bellevue Hospital, New York. The operative mortality is most creditable, 8.3 per cent. An analysis of their cases shows that except for the single fatality, and 2 cases of 24 hours, 1 case of 22 hours, and 1 case of 12 hours' duration, all were operated within an 8-hour interval and 8 within a 5-hour interval. Also, from what is stated, one concludes that these writers included several cases of subacute or walled-off perforation. Follow-up studies showed that there was a 6-hour gastric residue and related symptomatology in several.

The mortality figure (6.6 per cent.) reported by Brenner[1] in his 15 cases is also very creditable when one considers that his single fatality was due to pulmonary embolism. Later studies, however, demonstrated that secondary gastro-enterostomy was performed 3 times, once for a recurrence with hemorrhage. The elapsed time after perforation averaged 10.6 hours, the longest interval being 26 hours.

With the report of Hromada and Newman[7] we find again the tendency toward the most radical procedure—resection. They state that in all cases peritonitis was widespread, the time interval since perforation varying from 1¼ to 36 hours. Their reason for such a radical procedure is the fear of a recurrence and their belief

that it is the only way to limit the secretions. That is, they consider a ruptured ulcer in the same category as a simple ulcer. The mortality of 35.7 per cent. seems high, but as they point out, all cases were really well when studied later.

Finally, the series of 59 cases reported by Pool and Dineen.[11] The mortality for the entire group was 18.6 per cent.; that for the 9 in which gastro-enterostomy was performed in addition to suture, it was zero. In addition to these data they present follow-up studies on the simple suture cases, which show that of 36 patients followed for 1 to 6 years 10, or almost one-third showed gastric stasis, for which 7 had had secondary gastro-enterostomy. Of the 11 fatalities 7 were due to peritonitis, and they reason that because death was in no case due to obstruction gastro-enterostomy cannot be put forward as a factor of assistance! They point out again the striking importance of the time interval from perforation to operation. Thus, in their group, no case operated upon within 6 hours (40 cases) failed to recover, whereas there were 7 deaths in 9 cases operated upon after 22 hours.

A résumé of these reports gives us a total of 486 cases of free perforation of gastric and duodenal ulcer in which the primary mortality figures for simple closure (19.4 per cent.), closure plus gastro-enterostomy (24.3 per cent.), and resection (22.8 per cent.) are not appreciably different. The last group is so small that it would seem unwise, at the present time, to draw any conclusions from it, but it does seem as if we might begin now to evaluate the end-results in the other two groups. In the group of simple closure, we find a large number developing symptoms of gastric retention which in a fair percentage of instances has necessitated a secondary gastro-enterostomy, whereas in the cases submitted to primary gastro-enterostomy the incidence of later complications is very infrequent. Moreover, there is the peculiar anomaly that recorders like Walker,[16] Richardson,[12] Pool[11] and others, though their statistics show a lower mortality and better end-results with primary gastro-enterostomy, decry this procedure. Is it not probable that Deaver[3] is right when he claims that a gastro-enterostomy promotes convalescence and actually diminishes mortality?

We do not wish for a moment to suggest that in any medical subject of this kind the remedy is either this method or that method. We do, however, want to point out that as far as the late results go, gastro-enterostomy yields appreciably better results. The question of the immediate result is more difficult to decide, but in the reports studied there was nothing to indicate that gastro-enterostomy carried an added burden. Moreover, it is our impression that Deaver is justified in his contention that gastro-enterostomy promotes a more rapid and smooth convalescence.

We come now to the few cases we have to report from the Surgical Clinic of the Peter Bent Brigham Hospital, Boston. There are 11 cases of acute perforated gastric or duodenal ulcer that have come to operation since the opening of that hospital, January 27, 1913. In addition there is a somewhat smaller group of subacute or chronic ulcer with localized perforation which do not properly enter into such a discussion as this. Also there were during this period of almost 10 years two cases with a typical history and findings of the acute type but which entered the hospital either moribund or in a condition so critical as to render operation inadvisable. To forestall any contentions that we thereby keep down our mortality statistics, let us say at once that one of us was personally responsible for refusing operation in both cases. In one case, the perforation had lasted days, the patient was 60 years old and practically moribund on admission with a falling blood pressure of 60. The other case was a man of 58 with symptoms of acute perforation 10 days before admission who showed no reaction, a white count of 6000, a pulse rate of 110, and a blood pressure of 90, that kept falling. In addition, there was a marked anemia with tarry stools, indicating hemorrhage, as well as perforation. An acute bilateral septic parotitis further complicated the picture.

We have divided the cases into two groups: (1) gastric (5 cases), and (2) duodenal (6 cases). The groups appear nearly equal, but let us point out that in 3 of the 5 gastric cases the ulcer was pyloric. This may be sufficient to throw some doubt on the operator's location of the perforation, since it is well recognized that ulcers at the pylorus are in the majority of the lesions on the duodenal side. Taking the 11 cases as a single group, we find the lesion within 1 inch of the pylorus in 9 cases (82 per cent.).

Of the 11 patients 2 were females and 9 males, and none of the duodenal cases were females. The rarity of such perforating ulcers of the duodenum in females is constantly emphasized in the literature. In Deaver's series,[3] there was but 1 female to 54 males.

The ages in our cases varied from 19 to 50 years. Occupation seemed to bear no relationship, about 50 per cent. belonging to the class of manual workers.

The interval from perforation to operation varied from 6 to 96 hours, with an average duration of 21.5 hours. This is a relatively long interval, but if we except the 96-hour case the interval is only 14 hours, which corresponds more closely with the short interval in the various series already reported where the mortality is low. Thus in Gibson's series,[5] the average interval was 8½ hours, in Hepburn's series[6] 9½, in Brenner's[1] 10.6 hours.

A previous history of some form of indigestion was obtained in all but two cases, although it seems fair to state that in two other cases this was only brought out by direct questioning.

CHART II

Summary of Cases of Perforated Ulcers of the Stomach and Duodenum.

A. Cases of Gastric Ulcer Perforation.

No. Name	Age Sex Occupation	Past History	Present Illness	Physical Examination	T.P.R. W.B.C.
14067 M.H.D	26 M. Teamster	Epigastric pain after meals for 7½ years. Tarry stools.	Sudden, severe cramp-like abdominal pain, generalized. Vomiting blood.	Moderate shock. Extreme pain. Tender over whole abdomen. Board-like rigidity over whole abdomen. Shifting dullness.	T. 100 P. 100 R. 25 Wbc. 14,600
16712 A.E.K.	19 M. Draftsman	Rheumatic fever. Precordial pain Pulmonary t.b.c. Gnawing pain in epigastrium for 2 months.	Sudden sharp pain in left side. Nausea. Generalized pain later.	Moderate pain and shock. Generalized abdominal distention and tenderness. Rigidity. Dulness in flanks.	T. 99.5 P. 110 R. 27 Wbc. 32,400
4688 M.S.	49 F. Teacher	"Stomach" trouble from early childhood, in form of pain after eating. Remissions.	Sharp pain in epigastrium for 3 days. Vomiting 1 day. Tired feeling.	Moderate shock. Moderate distention. Acute tenderness in upper abdomen. Tympany.	T. 98.8 P. 110 R. 25 Wbc. 8,100
1147 M.K.	50 F. Cook	Pain and distress after meals for 7 years. 1 hemorrhage.	2 weeks of epigastric distress. 2 days of severe pain in left hypochondrium with vomiting.	Comfortable. Distended. Shifting dulness in both flanks. Tenderness, acute in upper abdomen.	T. 101.6 P. 115 R. 45 Wbc. 21,900
8000 W.G.	46 M. Janitor	Indigestion and stomach trouble for 30 years. Nausea. Vomiting. Tarry stools.	"Tearing" pain in abdomen, doubling him up. Vomiting. Very sudden onset.	Patient in agony. Coughing. Distended. Shifting dulness. Tenderness all over abdomen.	T. 100.6 P. 92 R. 25 Wbc. 12,500

B. Cases of Duodenal Ulcer Perforation.

13711 M.C.	35 M. Blacksmith	Negative throughout.	Severe knife-like pain in epigastrium. Sudden onset. No vomiting.	Cyanotic. Abdomen scaphoid. Generalized spasm and tenderness.	T. 101.4 P. 90 R. 30 Wbc. 12,000
11247 J.F.	33 M. Tailor	Negative throughout.	1 wk. of very mild epigastric distress, worse after eating. Severe, general abdominal pain 21 hrs. before operation. Nausea.	Patient quite prostrated. Abdomen level, tympanitic. Spasm over entire rt. rectus. Left epigastrium also tender and spastic.	T. 102.4 P. 100 R. 35 Wbc. 15.000
14215 W.F.R.	29 M. Chauffeur	2 yrs. of sour stomach and dyspnoea following eating.	Agonizing pain in mid-epigastrium which prostrated him.	Patient doubled up, moaning, in acute distress. No vomiting.	T. 101.6 P. 100 R. 35 Wbc. 8,800
11819 F.P.B.	29 M. Garage Man	Negative except for pneumonia and very indefinite story of indigestion.	Severe, sudden, stabbing pain in epigastrium with nausea and vomiting.	Moderate shock. Abdomen level, marked spasm on right with tenderness. Dull in flanks.	T. 99.6 P 80 R 20 Wbc. 18,000
8943 H.E.	43 M. Business Man	Distress with moderate pain at intervals in upper abdomen for 20 yrs.	Sudden. severe, excruciating pain in upper abdomen. Sweating. No nausea or vomiting.	Moderate shock. Acute tenderness and spasm in upper abdomen. Breathing shallow. Dull in flanks.	T. 100.2 P. 90 R. 20 Wbc. 21.000
7263 E.F.	36 M. Laborer	Sour stomach for years. Otherwise negative.	1 wk. of pain in upper abdomen. Acute, sudden pain in abdomen doubling patient up 10 hrs. before operation. Vomiting.	Fairly comfortable. Distended moderately. Very tender over whole abdomen. No fluid made out. Rigidity.	T. 98.8 P. 70 Wbc. 11,000

CHART II

Summary of Cases of Perforated Ulcers of the Stomach and Duodenum.

Preoperative Diagnosis	Interval from onset to Op.	Findings	Procedure	Result	Remarks
Ruptured peptic ulcer.	6 hrs.	Perforation 1 cm. in diameter on anterior surface of antrum 1 cm. proximal to pylorus. Free fluid. Fibrin.	Cauterization. Closure of perforation. Gastro-enterostomy.	Recovered. Discharged improved.	4 wks. post-op. X-Ray Studies=no 6 hr. residue. Functioning stoma.
Peritonitis, general, probably from perforated ulcer. ? appendix.	24 hrs.	Large indurated ulcer on lesser curvature with 3 perforations. free fluid and fibrin.	Infolding of ulcer with inverting sutures.	Recovered.	Returned 6 mos. later for gastro-enterostomy. (Hourglass constriction). (Fig. II.) 1 yr. later X-Ray shows functioning stoma, no residue.
Perforated ulcer.	96 hrs.	Perforation 1 cm. in diameter 8 cm. from pylorus on lesser curvature. Free fluid. Gas. Much fibrin. Adhesions, fresh, everywhere.	Drainage	Dead.	Patient's condition poor from start. No general anaesthetic could be used.
Perforated ulcer.	22 hrs.	Perforation of pylorus. Many adhesions. Fibrin. Abdomen filled with discolored fluid. Stomach filled with same and gas.	Closure. Gastro-enterostomy.	Recovery. Repair of hernia in scar.	
Perforated ulcer.	7 hrs.	Pin-head sized perforation proximal to pylorus, on lesser curvature. Free fluid with flocculent material. Pylorus patent.	Closure.	Recovered.	2 yrs. later no abdominal complaints. Marked mental deterioration, with profound depression.
Ruptured duodenal ulcer.	18½ hrs.	Small perforation on the duodenal side of pylorus.	Closure. Plication. Gastro-enterostomy.	Recovered	X-Ray studies 1 month later, no residue—all barium via stoma. 9 mos. later bronchitis. No abdominal symptoms. 16 mos later still well.
Ruptured appendix.	21 hrs.	Perforation ½ cm. in diameter on superior surface of 1st portion of duodenum. Free fluid. Adhesion.	Appendectomy, cauterization and infolding of ulcer Gastro-enterostomy.	Recovered	2 yrs. later reoperated for gastro-jejunal ulcer.
Perforated ulcer.	7 hrs.	Perforation 1 cm. distal to pylorus. Free fluid, gas, fibrin, food particles in abdominal cavity.	Closure. Gastro-enterostomy.	Recovered subphrenic abscess, drained.	Good health 2 yrs. later. At work.
Perforated ulcer. ? appendix.	6 hrs.	Small perforation on superior surface of duodenum distal to pylorus. Free fluid. Fibrin. Adhesions absent.	Closure with cauterization of ulcer. Gastro-enterostomy.	Recovered	X-Ray studies, 1 month postop., no residue. Well 1 yr. later, except for slight distress in epigastrium if patient overeats.
Perforated ulcer.	12 hrs.	Perforation 1 cm. in diameter 2½ cm. from pylorus on superior surface of 1st portion of duodenum. Free fluid and gas. Adhesions. Fibrin.	Closure. Gastro-enterostomy	Recovered	In excellent health 2 years later.
Perforated ulcer.	10 hrs.	Perforation just distal to pylorus on superior surface 2 cm. in diameter. Free fluid and gas in abdomen.	Excision of ulcer. Gastro-enterostomy.	Recovered	Some abdominal discomfort 2 years later. Able to work. 5½ yrs. later X-Ray studies show no residue, all food via stoma.

Should we, however, merely have had accepted the patients' original story of the acute trouble coming on without any warning, almost 50 per cent. of the cases occurred without warning in previously well people. We ourselves wish to emphasize the possibility of this type of case, because it is this class in whom the diagnosis is most perplexing.

Simple drainage under novocain was done as the only resort and without much hope.

The operative procedure was drainage only, 1 case (No. 4688), suture of perforation 2 cases (Nos. 16712 and 8000), suture of the perforation plus gastro-enterostomy 8 cases. In every duodenal case gastro-enterostomy was performed. It is obvious that in our clinic simple closure has not

FIG. 2.—Hourglass stomach, Case 16712, postoperative.

There was one death, a mortality of 9 per cent. This case needs little explanation. The interval from perforation to operation was 96 hours, the patient's condition poor with a white count of 8100, indicating but little reaction.

been the method of choice, although these data concern five different surgeons and a period of 10 years. In the first place, simple closure was used only twice and both times in cases of gastric perforation. In the case of 24 hours' dura-

tion (No. 16712), this unquestionably was the proper procedure. The patient suffered from a 24-hour perforation and was known to have pulmonary tuberculosis. Any extended operation would have been unwise. Moreover, the value of gastro-enterostomy in gastric ulcer is by no means an accepted fact. The second case (No. 8000) was also a gastric case, evidently a good risk. The lesion did not seem to interfere with the pylorus, and the choice of operation seems to have been wise, for 2 years later no abdominal complaints were present. The previous case returned later with epigastric pain and x-ray evidence of beginning hour-glass stomach, for which gastro-enterostomy was done with relief.

The 8 other cases were treated by closure of the perforation and a straightforward posterior gastro-jejunostomy. In this group are the 6 duodenal cases and 2 gastric cases. The time interval from perforation to operation averaged 12.7 hours, placing the average at a safe level. There were, however, among these 8 cases 1 case of 21 and another of 22 hours' duration.

Now as to the later results. In no class of follow-up work is it more important to see the patients after a considerable interval and to have control x-ray studies made. Unfortunately, we have not been able to obtain the latter data on all cases. The fact that the earlier cases are now 8 years post-operative added to our follow-up difficulties. However, we have some late information on all cases.

1. The case in whom drainage only was employed died.

2. Of the 2 cases with simple closure of the perforation, one returned for gastro-enterostomy, and now, 6 months later, presents vague symptoms of epigastric discomfort. X-ray studies show a beginning hour-glass constriction. The second case has disappeared, but when last seen 2 years after his operation, was in good condition without any abdominal complaints.

3. All of the 8 gastro-enterostomy cases have been heard from recently. Five are unqualifiedly well, 2 have some epigastric discomfort if they overeat, but are at work. One case (No. 11247) returned within 8 months complaining of pain in the epigastrium on eating. X-ray studies repeated twice within 12 months were negative except for a rapidly emptying stomach. Two years following the original operation, however, he was operated upon at another hospital for a gastro-jejunal ulcer and is now well.

DISCUSSION.

The preponderance among males, especially in the duodenal ulcer cases, is marked.

There is no relation to age.

Although more than 75 per cent. of the cases do show a history of indigestion or other abdominal complaint preceding the acute rupture, there are a certain number of cases that do occur without any warning. Two such cases are reported. Deaver[3] states that in 20 per cent. of such cases perforation may be the first sign. The duration of symptoms in the other cases may run up to 20 years or more. Added information as regards "silent" ulcers is given in Nielsen's report[10] from Faber's clinic at Copenhagen, where 25 per cent. of 55 fatal hemorrhages from ulcer cases showed no previous history.

The most important factor as regards mortality seems to be the duration of the interval from perforation to operation. In our series the only case of over 24 hours' duration died. Straeuli[15] states that cases that live in which the perforation has existed over 24 hours are most probably cases of "covered" perforation. Deaver,[3] however, presents 4 recoveries among patients in whom the interval was from 24 to 72 hours, and other fortunate results after this limit is reached are published.

The question of the operative procedure cannot be settled by any hard and fast rule. The evidence, however, would seem to indicate that gastro-enterostomy does not appreciably increase the risk, no matter what the time interval, for there are many cases alive today in whom this was done after a 20-hour interval. The evidence would, moreover, seem to show that the convalescence in these cases was even less stormy than in the cases of simple suture. And further, the evidence is incontrovertible that in these cases in which a primary gastro-enterostomy is done the late results are far more satisfactory and a secondary operation is unnecessary. Let us say, however, that this reasoning is less well supported in gastric lesions proximal to the pylorus and better substantiated when the lesion is actually in or close to the pylorus. All of which must mean that a scar in this region, even if entirely healed, impairs sufficiently the function of the sphincter musele to result in obstructive symptoms.

It would be a rash surgeon indeed who would urge a radical operation on a very sick patien , and our own experience is not sufficiently large to justify laying down any rules to others. We will be frank enough to say, however, that in any case under 24 hours, unless some special factors contraindicated, we should feel it best to do a gastro-enterostomy. Of the 11 cases in our series we personally operated upon 5, the time interval being 7 hours, 18½ hours, 21 hours, 6 hours, and 26 hours respectively. The convalescence in 4 cases was entirely satisfactory, and in the fifth delayed only by the presence of pulmonary tuberculosis. Gastro-enterostomy is not a long operation, it does not require the trauma of retractors, and the added 30 minutes of anesthesia should not be deleterious.

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SO-CALLED GAS IN THE STOMACH.*

BY FRANCIS W. PALFREY, M.D., BOSTON.

The subject of what patients call "gas in the stomach" may at first sight seem a trivial one, since most patients with whom this is the chief complaint are not seriously sick. On the other hand, the complaint of "gas" is one which every doctor hears frequently, and many patients who have this symptom are difficult to improve. Also this subject is one upon which practically all patients have a mistaken conception, which tends to make them exaggerate the importance of their symptom. They conceive of the contents of their stomachs as in a seething, bubbling state of fermentation. They think that large volumes of gas are constantly forming within them, and that this gas must be got rid of to prevent disaster. Of course we know that this is all wrong. The gaseous contents of the stomach are, for practical purposes, nothing but atmospheric air. Gas formation by fermentation in the stomach in any important amount is rare and is practically confined to cases of organic stenosis of the pylorus. Still we must recognize that these patients have real discomfort in which the gaseous contents of the stomach seem to be concerned. It is therefore desirable that we should understand more about it.

Physiology as currently taught in medical schools and text-books deals very inadequately with the gaseous contents of the stomach. In clinical investigation, too, the gaseous contents of the stomach seem to have been strangely neglected. The fluid contents have been studied exhaustively,—chemically, microscopically and radiologically,—but the gaseous contents have too often been forgotten. I have therefore hoped that you might be interested to hear a summary of what is known on this subject, together with some deductions of my own that seem to me of assistance in practical treatment.

Physiology teaches that the stomach is a hollow saccular organ, of familiar shape, entered by the cardiac orifice from above, and drained by the pylorus. In its fasting state it is not collapsed, but contains a certain amount of air together with a little fluid. When a meal is taken, the food and fluid ingested gravitate to the lowest portion, and the air already in the stomach occupies the upper portion. With the ingestion of a meal the stomach automatically relaxes, so that there is no increase of internal pressure. As the meal is discharged through the pylorus the stomach gradually reverts to the original fasting condition. Chemical analysis of the gaseous contents of the stomach shows atmospheric air with only negligible amounts of other gases, in contrast to the gaseous contents of the colon. Moritz has shown that the contents of the stomach are under a slight degree of positive pressure, varying somewhat according to posture of the body; but that intragastric pressures of over 20 cm. of water cause discomfort.

This is practically the extent of our theoretical knowledge. Physiology recognizes that the stomach contains air, but beyond this recognition disregards it. Medicine recognizes that increase of pressure in this volume of air may cause discomfort, but deals little with conditions which may induce such increases in pressure or their clinical occurrence.

Now it is natural to inquire whether this air in the stomach does not exist for some useful purpose. And, once the question is asked, two fairly obvious answers come at once to mind. The first answer, which, however, will concern us less in the present discussion, is that the gases contained both in the stomach and in the intestines presumably serve to absorb shocks which might otherwise cause injury. Gases are light and elastic; fluids are heavy and inelastic. If you fill a pig-bladder with air and kick it, it will serve as a football. If you fill the same bladder with water and kick it, it will probably burst. If you can imagine a stomach filled entirely with fluid, I think it will be clear to you that such a stomach's walls would be in greater danger of injury from blows and compressions than would be those of a stomach containing air.

But the other answer is for our purposes more important, and may already be uppermost in your minds: namely, that the normal air of the stomach, ready to escape through a normal cardiac orifice, is to be regarded as a safety-valve

*Read before the Somerville Medical Society, January 11, 1923.

mechanism to guard against excessive intragastric pressure. Physiology, so far as my reading goes, does not count belching, the act by which some of the air in the stomach is discharged through the esophagus, as a normal occurrence, but rather regards it as a pathological act like regurgitation or vomiting. On the other hand, it is my observation that few, if any, people are free from belching of a certain sort, which I shall, therefore, call normal belching—an effortless, slight, almost unconscious escape of air from time to time, particularly during digestion. This is not accompanied by discomfort, but rather by some slight degree of satisfaction. It seems to accompany a wholesome rather than a disordered state of gastric digestion. It may be that there are persons in whom the adjustment of the stomach to its contents is so perfect that such belching never occurs, but it is my belief that such an ideal condition is rare. On the other hand, there are persons in whom belching is difficult and unsatisfactory, and these are the ones who complain of "gas." It seems to me, therefore, that it is a mistake to consider all belching abnormal, but rather that we should consider it a normal function which sometimes becomes disturbed, and that only in case of such disturbance does it become abnormal and a symptom of a disordered condition.

Now as to the symptom of "gas in the stomach." From what I have said so far and from your own observations, I think that you will agree to this statement of the origin of the complaint: that the distress attributed to "gas in the stomach" is due to a failure of the act of belching to maintain a proper adjustment of intragastric pressure. Whether or not there may also be factors that create abnormal needs for adjustment by this mechanism, we shall inquire later; but, even if such exist, the fact remains that the function of belching has failed in its task of providing the necessary adjustment.

RESISTANT CARDIAC ORIFICE.

Let us consider first, then, what factors we can suspect of so disturbing the function of belching that it will fail in its function of a safety valve, and deprive the stomach of the relief from internal pressure which it should furnish. Any safety valve, to work properly, must give way and release pressure at a point lower than that at which the pressure becomes objectionable. In these patients who complain of "gas," it seems to me necessary to assume that the cardiac orifice in some way becomes unable to give way so as to relieve pressure that is uncomfortable. One possible explanation of this fault lies in anatomical variation. Human adult stomachs vary in shape between two types, some approaching the tubular type, as represented in the animal kingdom by the stomach of the cat, while others are more of the saccular type, which reaches its extreme in the stomach of the rabbit. The cardiac orifice does not enter the highest point of the stomach, but enters from the right or inner (also posterior) aspect at a variable distance below the dome of the fundus. Now it is a well-known fact in biology that the rabbit is unable to vomit, while the cat vomits readily, and the difference is believed to be due to the contrast between the saccular stomach of one and the tubular stomach of the other. By analogy it seems possible that differences in the ease of belching in individual human patients may be due to individual anatomical variations in the human stomach. Another possibility is as follows: If, in the cadaver, the stomach is opened and pressure is made from within upon the cardiac orifice from left to right, such as might be exerted by an increased intragastric pressure, the cardiac orifice and the sub-diaphragmatic portion of the esophagus tend to fall into folds and wrinkles, like the finger of a glove that is compressed longitudinally, and their appearance suggests that this puckered state might resist the free passage of air up to a certain degree of pressure. The plausibility of this is somewhat increased by the fact that many patients who complain of "gas" are, or have been, addicted to overeating, which might well cause effects of pressure upon the cardiac orifice, and might also develop a saccular dilated type of stomach. I cannot pretend to feel that the exact mechanism can yet be established, but I am convinced that some mechanism by which the escape of air is rendered difficult must necessarily be assumed.

INCREASED GASTRIC TONICITY.

Next we must consider the question of whether factors exist which throw excessive demands upon this assumed safety-valve function of belching,—in other words, whether there are causes of elevations of intragastric pressure that need to be relieved more than normally by escape of air. The existence of such factors seems probable. We know that the fasting stomach normally shows rhythmic elevations of internal pressure, the so-called hunger contractions. These, by the way, are often accompanied by slight normal belching. After barium meals we see by fluoroscope great variations in the activity of gastric peristalsis, and overactive peristalsis might well disturb the normalcy of intragastric pressure. On the grounds of clinical observation we notice a need for belching, normal or abnormal, after overeating, and still more where there is reason to believe that the stomach is in an irritated state, as in gastritis due to alcohol or to irritant food or drugs, or in hyperacidity or ulcer. I have said at the beginning that belching is not due to gas-forming fermentation. I do not consider excluded, however, the occurrence of fermentative decomposition of certain foods in the stomach with the formation of irritant products which may, by causing irri-

tation, create an abnormal need for belching. This seems to me a possible explanation of the popular misconception as to fermentation. If we are to accept the teachings of Alvarez, disturbed peristalsis of the stomach may also result from more remote influences, as from disease of the gall-bladder, the appendix or even the pelvis.

The complaint of "gas," then, I attribute, in its more marked degrees, to the coexistence of two factors: an influence which elevates intragastric pressure combined with failure of the safety-valve mechanism of the cardiac orifice.

TREATMENT.

The treatment of this symptom, therefore, divides itself between measures to improve the function of the cardiac orifice, and measures to reduce the tendency to elevations of intragastric pressure. The fault of the cardiac orifice so far as it may be anatomical we are, unfortunately, unable to influence, but so far as it may be the result of acquired dilatation and distention we may be able to improve it by proper feeding. The measures to reduce the need for belching comprise the treatment of all forms of what may be called the irritative, as contrasted with the atonic, disorders of the stomach, whichever variety may be present in the given case.

In practice I have had the best success through the following course: First, instituting a small-bulk dry diet in six meals instead of three per day, and with liquids, except in minimal amounts, only between meals, so as to avoid at any time any great distention of the stomach. Second, avoidance in this diet of all substances capable of causing irritation, with special reference to the previous faults of the special case. Thus no food should be given which is not capable of being reduced by mastication to a liquid or a soft pulp, so as to avoid mechanical irritation, and proper mastication should be enforced. Alcohol, spices and irritant drugs (including highly flavored dyspepsia tablets) should be forbidden. In cases of hyperacidity or ulcer the diet should be further modified as indicated by other symptoms. In cases where there may be irritant-forming fermentation or special susceptibility to certain foods the offending articles should so far as possible be identified and avoided. Third, drug treatment to allay irritations and to lessen excessive motor action. As to carminatives, it is my feeling that these are best avoided. It must be admitted that they often give temporary relief, but it is my opinion that they do so only at the risk of continuing the irritation that has, in part, caused the original complaint. Where hyperacidity is a factor, milk of magnesia, or magnesium oxide in some other form, is usually of benefit; if this does not give relief sodium bicarbonate well diluted in water is to be used. Also in hyperacidity the use of bile preparations (Glycotauro tablets) which I have advocated in other articles is of advantage in diminishing the need for magnesia or soda. In disturbed muscular action of the stomach atropine gr. 1/150 to 1/100 three times a day may be of benefit. In obstinate cases, latent diseases of the appendix and gall-bladder are to be thought of. I have seen this symptom disappear after operations on both of these organs, but do not, of course, advocate exploration of these without other indications. Finally, it is a real help in bringing about improvement to explain to the patients what is the true view to take of their symptom, namely, that it is not due to a gas formation that threatens to burst the stomach, but that it is merely the result of an intolerance on the part of the stomach toward the air that is normally in it. With this explanation alone, many patients become more tolerant of a sense of epigastric pressure, and pay less attention to it.

NEUROTIC BELCHING.

In connection with this subject there is one somewhat peculiar observation that I have happened upon which may deserve mention. You have all seen occasional cases of the curious condition known as habitual neurotic belching. Patients who have this sit and belch every few minutes, often for hours at a time, usually in a peculiarly noisy manner. The total volume of air raised is obviously larger than could be contained at any one time in the stomach, so that it is commonly assumed that these persons perform the act of "cribbing," or swallowing air, as horses are supposed to do. But in spite of close watching, in most cases no one can see them do it, and they deny doing it. In one such case I took a tracing of intragastric pressure by means of a balloon on the end of a stomach tube, intending only to measure the height to which the pressure rose during this act. But to my surprise, the first event in each act of belching proved to be a fall to zero or negative pressure, followed later by the expected rise. In this and in other patients I have since watched this act of voluntary belching by fluoroscope, and in all of these, instead of a simple diminution of the size of the air bubble from escape of air, there was first a great expansion of the air bubble, followed by a contraction to somewhat less than the original size. From this it appears that what we had considered a simple expulsion of air is in reality a double act, first of suction of air into the stomach followed immediately by its expulsion. I conclude therefore that these patients should not be accused of cribbing between belches, but should rather be told to try to discontinue this double act which we have hitherto thought was simple belching. With this direction, supplemented by the treatment of "gas in the stomach" outlined above, improvement has been obtained.

311 Beacon Street.

REPORT OF 146 CASES OF SKIN AFFECTIONS TREATED WITH RADIUM.

BY FREDERICK BRYANT, M.D., WORCESTER, MASS.

THE past decade has witnessed an era of "realization" in the uncertain history of radium therapy. The first period, dating from its discovery in 1898 to, roughly, 1906, was most unfortunate in that it created an over-expectation. Radium was heralded as a cure-all. From 1906 to 1912 there followed another period, opposite but equally extreme and detrimental. Radium could cure nothing. But since 1912, thanks to scientific research and experimentation, radium has by sheer weight of its therapeutic virtue, been able to come back and to overcome the tremendous handicap which its unskilled and unscientific use had unjustly placed upon it. Properly applied, in a narrow line of well selected cases, radium has now taken a substantial and permanent place as a therapeutic agent of significant value. All this medical evolution has taken place in a few years and yet sufficient time has elapsed and the accumulation of evidence has been ample to substantiate these reasonable claims.

In no field of its application has radium been more successful (with the possible exception of cancer of the cervix of the uterus) than in the treatment of some of the diseases of the skin. It has received its chief employment in the treatment of cancer of the skin. It has now become the remedy of choice in cancer of the face and has almost entirely preëmpted this important field, because it so admirably adapts itself to the areas about and upon the nose, upon and neighboring the eyelids; because it accomplishes more thorough and permanent destruction with less scar, deformities, disturbance or pain and less impairment of function than any other agent. It is safer and more accurate in dosage than the roentgen ray. Radium can be better applied to local point contact either as a selective or as a destructive agent and may be pushed to complete destruction of the growth without harm to the surrounding tissues. The cosmetic results of radium are truly unique and delightful even when large areas of the face have been involved and much destruction of tissue has taken place (see Figures 19, 20 and 21).

From the standpoint of malignancy the skin is important since over 3000 die annually in the United States from this most hideous expression of a dread and loathsome disease. This should not be. From every angle, the possibility of early discovery, of early treatment and of the early removal of the exciting cause or exciting irritation, the skin has the great advantage over all other cancer localities. Cancer of the skin is a preventable and a curable disease. Here, then, are over 3000 agonizing and deforming deaths which might easily be deducted from cancer's ever-increasing toll.

To this end certain warnings should be sounded. There remains but little question that certain occupational and other forms of irritation are exciting causes of cancer of the skin. Habitual uncleanliness is among these irritative causes. Women suffer less because they are less exposed to occupational irritants and are more particular in the cleanly care of the face and hands.

FIG. 1.

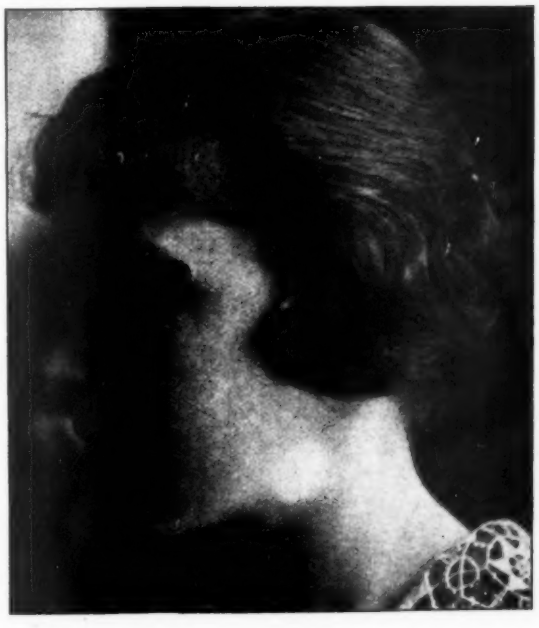


FIG. 2.

The claim has been made that cancer of the face and hands is excited by the irritative action of the actinic rays of the sun. We do not share this belief, because naked or semi-naked

races, like the Africans, seem almost never to develop cancer of the skin. The dwellers of the Tropics, where the sun is most constant and intense, have less cancer than those who live in the North, where there is less sun and more living under cover.

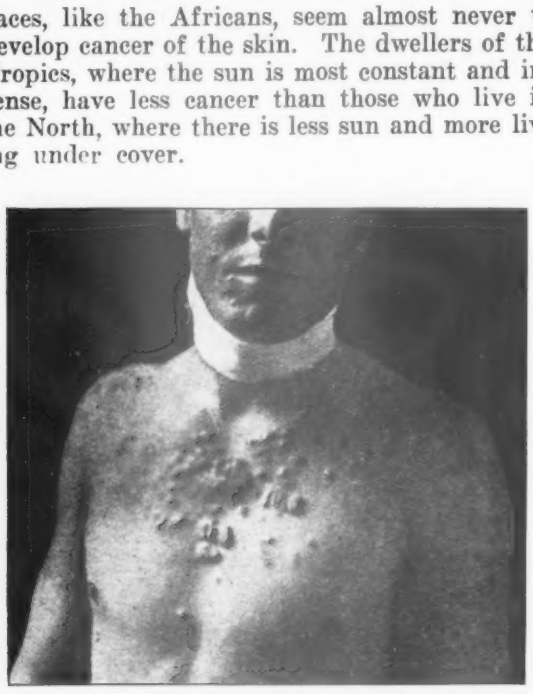


FIG. 3.

FIG. 4.

Over 90 per cent. of all skin cancers are found about the face and ears, while the backs of the hands account for a large proportion of the remainder. These are localities most exposed to occupational irritants, such as dust, grease, oil, smoke and fumes. The favorite cancer habitats upon the face are the localities or depressions which are less apt to be reached by friction of the towel, as for instance the junctions of the nose and cheeks and about the eyelids, places where dirt settles and remains if the face is neglected. After many years of such neglect cancer may be excited. In elderly people we often find hard black areas to which the name of senile keratoses has been given. After a long time these tend to become malignant.

The situation in cancer of the skin is most encouraging if only reasonable precautions and intelligence prevail, because it is easily discovered, tends to remain local, and in radium we have, if used in season, an almost positive cure. It is a preventable disease, for everyone must be

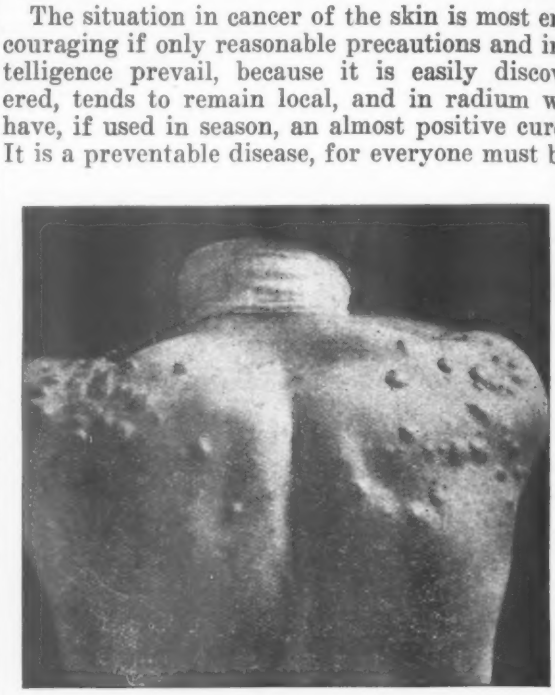


FIG. 5.

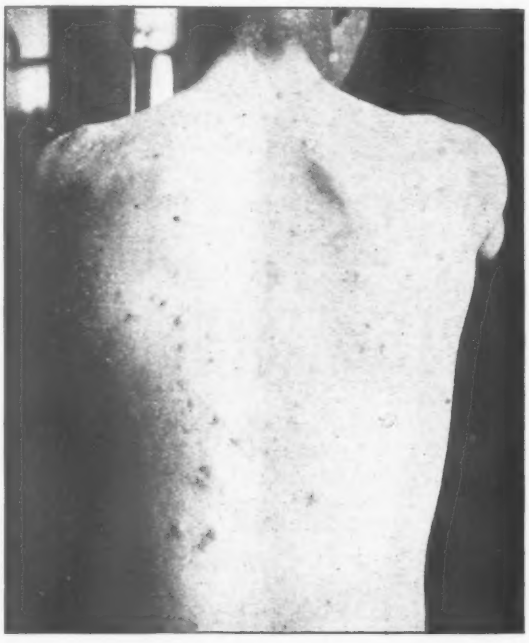


FIG. 6.

aware of the pre-cancerous irritations, which can be easily remedied. In this situation there is no excuse for cancer neglect.

The skin of the face and hands should be kept clean and in an active, healthy condition, free from irritative influences. If spectacles or eyeglasses cause irritation, either at the bridge of the nose or along the cheeks where the frames press, or at any point above, around back or under the ear, it should be remedied by a dif-

ferent bearing adjustment. All warts and moles, especially if pigmented, should be removed. Any unusual conditions of the skin, such as scabs or ulcerations, which persist should receive attention. If these simple rules are followed cancer of the skin will become a preventable, curable, and by-gone disease.

FIG. 7.

FIG. 8.

Figs. 1 and 2 forcibly present the serious significance of occupational irritations. Miss J., 21, violinist. For five years she played the violin extensively as teacher and as leader of an orchestra. Two years ago a tender area developed under her left chin where the violin rested against the neck. It grew larger, more sensitive and troublesome. Six months ago it began to scab and bleed. During the two years various forms of treatment were employed, such as washes, powders and ointments, but to no avail. A change of occupation was becoming a necessary but reluctant contemplation. The application of 150 milligram hours of unscreened radium gave complete relief without any pause in her musical activities. The specific action of

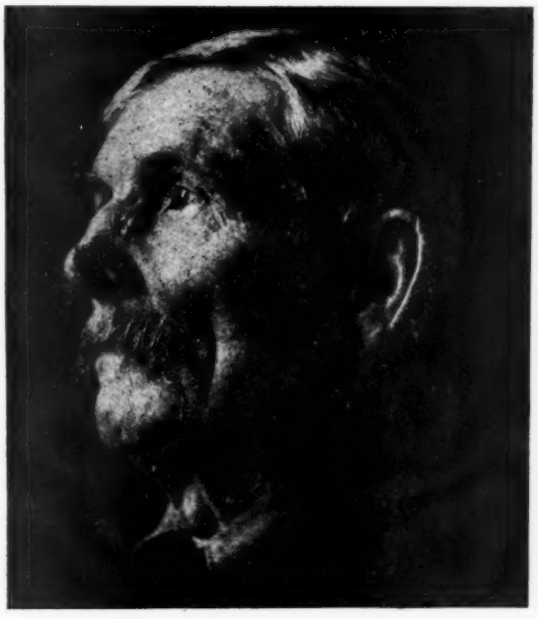


FIG. 9.

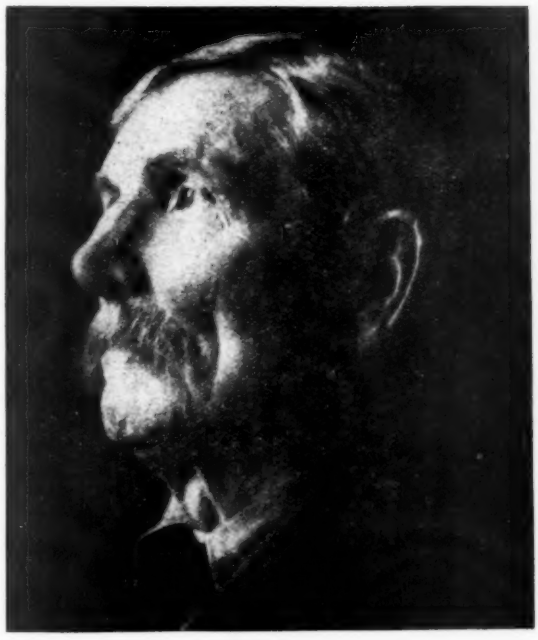


FIG. 10.

radium would lead us to believe that this purely occupational irritation had passed on to malignancy.

The writer wishes to report the results obtained in 146 cases of skin disease which were

selected as appropriate to radium therapy. Photographs of a few of these cases are presented. Of the 146 cases six were classified as lupus vulgaris, 12 as keloids, and 128 as epitheliomas. All of the cases were successfully relieved excepting five of the epitheliomas. In these five cases the process was so extensive with

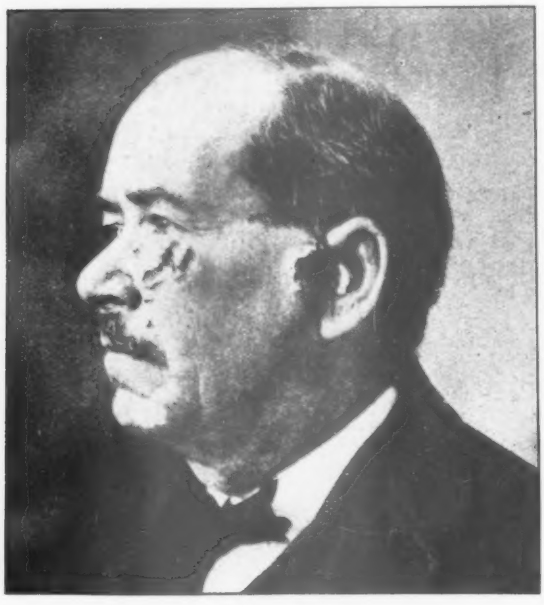


Fig. 11.

so much loss of tissue and the patients were so old, reduced and debilitated that repair was impossible. Palliation was all that could have been reasonably expected.

LUPUS VULGARIS.

In six cases of lupus vulgaris radium proved very efficient. One of these cases was extreme

Fig. 12.

and of long standing. One half of the face, including the forehead and chin, was almost completely involved. Seven years before the same disease occupied the identical area. A cure was accomplished after bi-weekly applications of x-ray extending over a period of three years. It is of interest to note that unscreened radium ac-

Fig. 13.

complished a similar result in 1200 milligram hours, or two sittings.

KELOIDS.

The results from unscreened radium in 12 cases of keloids were uniformly satisfactory. Removed by surgical means these growths return

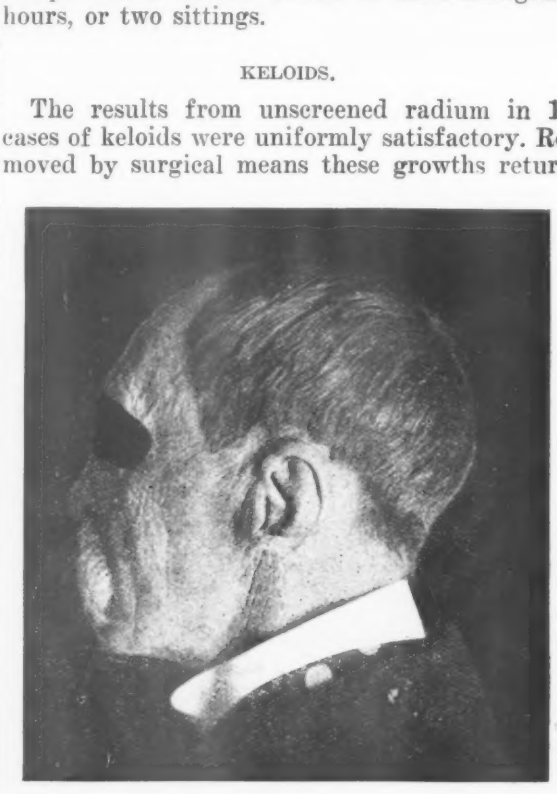


Fig. 14.

to their former size and appearance. We believe that unscreened radium should be employed with sufficient dosage to cause a marked reaction or even a small breaking down or ulcera-

tion that the quickest and best results may be obtained. Figs. 3 to 6 present an extensive case of multiple keloids which appear to have developed upon an equally severe case of acne. The patient's occupation was laborious and he began to complain of the soreness and irritation from his clothing pressing upon the growths.

That radium both produces and destroys fi-

Fig. 15.

brous tissue seems a paradox. The fibrosis which follows the use of radium is exceedingly hard, like scar tissue, and should be considered a repair process by which Nature replaces the tissues which have suffered destruction from the

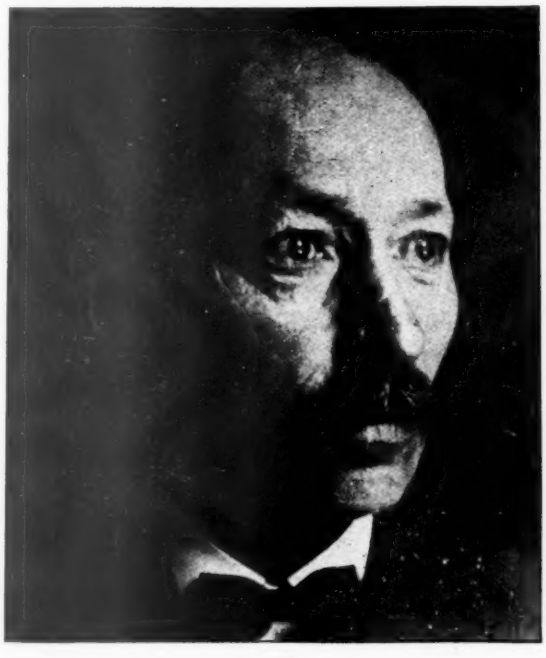


Fig. 16.

radiation. In the case of a fibroma or a keloid, we are dealing with a new growth. The cells or fibroblasts are undergoing a rapid mitosis. Radium possesses the specific power to intercept, delay, inhibit or destroy this reproductive process.

The writer desires to call attention to a few facts which have impressed him in the treat-

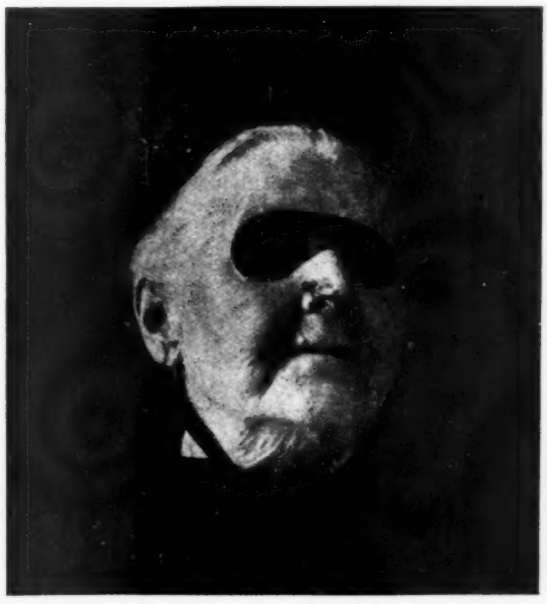


Fig. 17.

ment of skin cancer with radium, in regard to the relative degree of malignancy of different areas and in the same area. The regions involved in the 128 cases were as follows: The

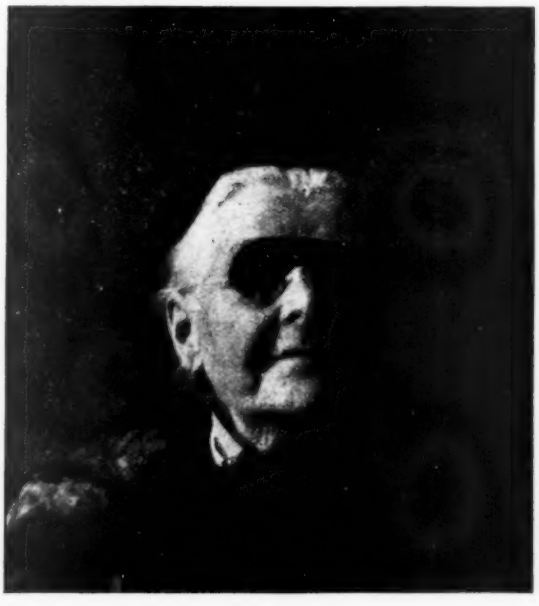


Fig. 18.

cheeks, 45; the nose, 30; eyelids, 15; ears, 10; neck, 9; temple, 9; hands, 5, forehead, 4, and penis, 1. This enumeration bears out the observation that nearly all skin cancers are upon the

most exposed parts. This suggests that occupational irritation plays a large part as an exciting cause.

A decided difference appears to exist in the radiation susceptibility of epitheliomas, depending upon the variety of cells involved. The deeper basal epithelial cells are particularly vulnerable and seem to extend or metastasize only by continuity, while the prickle or squamous variety are much less susceptible to radiation and tend to involve the neighboring lymph nodes. The former growths yield the most brilliant and quick results, while it is among the latter group that our failures are found.

The writer is reporting two rather extensive

Fig. 19.

cases of epithelioma which recovered from a single treatment of radium. Figs. 7 and 8 presented a chain of epitheliomas extending around the back of the neck. Each received 150 milligram hours of unscreened radium. Figs. 9 and 10 received but one 150 milligram hour application of unscreened radium to each area.

Figs. 11 and 12 received four applications of 200 milligram hours of unscreened radium to each area. The epithelioma on the left cheek was very annoying, as serum and blood continuously trickled down to his lips. To prevent this engaged all his time and attention. He soon resumed his work and in three years' time there has been no return.

Figs. 13 and 14 present an involvement of the ear. Such a situation we have always found difficult and slow to remedy. This particular case was under treatment 18 months. The process, which had removed the lobe, was bleeding freely, and had involved the skin around back and at the top of the ear. Here, as in all other ear involvements, the writer found that only the mildest doses of radium could be employed, as a full dose set up an alarming reaction, or chondritis, with great and painful swelling. At one point the cartilage was involved and yielded very slowly to radiation. Treatment should be begun very early in epithelioma of the ear.

Fig. 20.

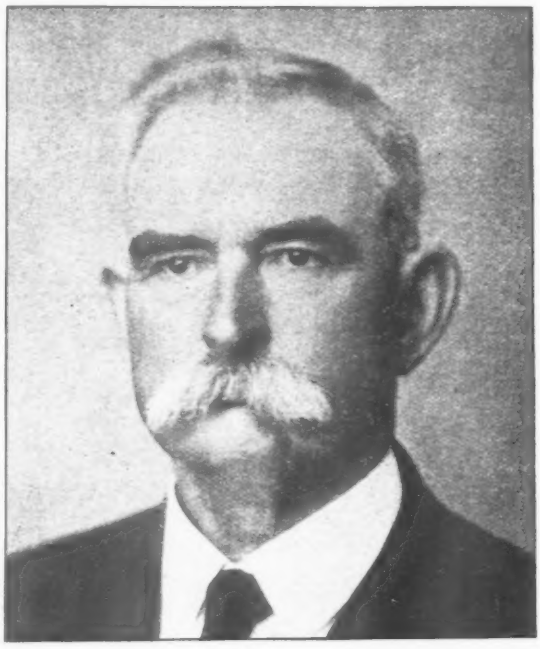


Fig. 21.

Figs. 15, 16, 17 and 18 present excellent cosmetic results from 200 milligram hour applications of unscreened radium. Figs. 19, 20, and 21, represent a case of epithelioma of the lower lip, but is included in this series because of the very extensive involvement of the skin of the chin and the unusually fine cosmetic result. Fig.

19 represents the patient in September, 1921, when he was an outcast—a loathsome object. He received 1000 milligram hours of unscreened radium. Fig. 20 represents him six months later when 500 milligram hours of unscreened radium were administered. Fig. 21 was taken in September, 1922, one year after the first treatment, when 500 milligram hours of heavily screened radium were given. He resumed work as lineman and has had no return. The glands of the neck were not involved.

From his experience the writer concludes that radium has a distinct place in the treatment of a group of skin diseases for which there is no other remedy. In all the cases illustrated in this report there was no other remedy, with the possible exception of the x-ray. After considerable experience with both agencies we much prefer radium in the treatment of the diseases of the skin which have been considered in this report.

The profession at large should come to know the possibilities of radium in this difficult and important field. We enter the plea that, in the light of well established facts and brilliant accomplishments, other remedies give place to the early use of radium in suitable skin diseases, that the all-important element of time may not be lost or the efficiency of radium be handicapped by the unsuccessful use of other remedies.

PHOTOTHERAPEUTIC CONSIDERATIONS IN SOME DERMATOSES.

BY WILLIAM J. MACDONALD, M.D., BOSTON,

Dermatologist, Carney Hospital.

CONSIDERING how much has been written of heliotherapy, it is surprising that so little is known about it, or if known, how little applied. Dr. Rollier in 1903 laid the nucleus of the present-day gigantic sanatorium in Leysin, Switzerland. His scientific efforts in the treatment of bone and joint tuberculosis are well known to anyone who has been fortunate enough to visit his sanatorium, where he has accommodation for more than a thousand patients. In the United States of America, heliotherapy has come into its own, and is now extensively used in many of the big sanatoria, of which that at Perrysburg, N. Y., is an example.

The question naturally arises—how do the sun's rays produce their therapeutic effect? The solar spectrum consists of seven visible rays. The longest rays that are visible are the red rays, beyond which are the longer, invisible, infra-red rays or heat waves, which comprise radiant heat. The shortest visible rays are the blue and violet, and beyond them are the shorter, invisible ultra-violet rays or chemical rays. Beyond these again are the still shorter roentgen and radium gamma rays. The ultra-violet rays have a distinct and marked beneficial action upon many pathological conditions. That is the answer to the question. These rays, therefore, when obtainable, provide a definite therapeutic addition to the physician's armamentarium. On high mountains, in country districts, or on desert plains the sunlight is always obtainable. In cities, robbed of its ultra-violet rays, the sun ceases to be useful, and we have to utilize a substitute. By passing an electric current through a mercury-filled quartz chamber, a flood of light, tremendously rich in ultra-violet rays, is emitted. This valuable radiation is produced by the Alpine and Kromayer lamps. The chemical action of the ultra-violet light represents one of the three factors in all growth, and sustained life in the animal and vegetable kingdom. At Leysin, it is utilized in the treatment of pulmonary tuberculosis, tuberculous fistulae, sinuses, abscesses, skin eruptions, and many other pathological conditions. During the late war, while serving with the 24th Stationary Hospital in Egypt we utilized the sun's rays in the management of stubborn surgical and dermatological conditions. Suppurating wounds were exposed directly to the sunlight. Bedridden pneumonia patients were carried out and treated similarly. As we were a desert hospital we were not trammelled by the proximity of any large cities. Our cases never failed to improve and recover rapidly.

The action of the ultra-violet rays is based on the facts that:

1. The internal organism is relieved by the blood being drawn to the skin.
2. The red corpuscles of the blood being charged with light energy, convey to the cellular elements of the body an increased amount of oxygen, and carry away an increased amount of toxic gases.

Dr. Bovie of Harvard states "that with the exception of diabetes, quartz light results in a raising of the factor of tissue vitality, or, as it might be termed, of the patient's prophylactic resistance to disorders of nutrition, whether of acidosis or other low oxidation states."

Why is it that men or women who utilize the beaches rarely are troubled with furuncles, acne, or seborrhea corporis? The answer is self-evident. It is manifestly impossible on our beaches to discard that encumbrance, the bathing suit, which certainly does deprive the skin of the sun's rays.

Considering the subject from a dermatological standpoint, the ultra-violet rays have a very extensive application. Their use obviates the employment of disagreeable external applications. Only a small percentage of sane people enjoy the benefit to be got from greasy ointments. Present them with an efficient and cleanly form of treatment and they will gladly avail themselves of it.

The skin diseases that have been benefited most readily in our experience by the ultra-

violet light are: alopecia areata, erythema induratum, acute eczema, ulcers, pityriasis rosea, scabies, generalized psoriasis, generalized ringworm, seborrhea corporis et capitis, scrofuloderma, fistulae and sinuses, dermatitis venenata, furunculosis, dermatitis herpetiformis, neurodermatitis, lupus erythematosus, rosacea, pruritus, and folliculitis decalvans. Acne vulgaris of the pustular and papular type respond well, but we have not had such success as with the roentgen rays. Neurodermite, always a very recalcitrant affection, responds excellently to the ultra-violet light, although we prefer the roentgen rays if possible.

In private practice and in the dermatological department of Carney Hospital, we use the mercury vapor light wherever possible, relegating ointments to the back shelf. Where a combination of the two is necessary owing to time, we obtain more rapid results than with the employment of ointment alone. In order to illustrate the above statements, the following cases are cited:

Case 1. Miss M. G. Private patient; age 22. Clerk. Referred by Dr. Cross. Diagnosis, erythema induratum. This patient complained of painful ulcers situated upon the legs. Duration, three years. No previous treatment had proved curative or helpful. Upon the anterior, posterior and lateral surfaces of both legs were about fifty shallow ulcers, from the size of a pea to that of a silver quarter. The ulcers were punched out, with sloughy bases, and were very painful. Livid blue, dollar-sized unulcerated nodules were scattered irregularly over the legs. This patient, in addition, had acne pustulosa on a greasy skin. Treatment consisted in 12 weekly exposures to the Alpine lamp. The ulcers were rayed intensively; the whole body was treated with gradually increasing doses. Cod-liver oil was given internally. She increased in strength, weight and looks; her ulcers completely healed up; her whole body gradually acquired a healthy tan.

Case 2. S. J. Female, age 52. Diagnosis, folliculitis decalvans. General health was good. For ten months she had complained of an eruption on the scalp, characterized by small painful follicular pustules, which rapidly drying up formed a scab. Upon removal of the scab, a scar resulted with loss of the hair. She resisted all forms of treatment until the Alpine Sun lamp was used. Four exposures rapidly cured the condition.

Case 3. Miss R. M., age 20. Private patient. Diagnosis, seborrheic eczema corporis. Duration of disease, four months. General health was good. Patient complained of an eruption moderately itchy, pinkish red in color, situated on the sternum, covered with very fine greasy scales. The eruption was not extensive, being limited to the sternum. The outlying skin showed a few pin-head sized papules. Two exposures to the Alpine Sun lamp completely cleared the skin.

Case 4. Miss V. N., age 19. Private patient. Diagnosis, seborrhea of the face. This patient complained of a "greasy skin," and a "lump in the face." Her general health was good. The face showed a few scattered comedones, patent follicular orifices and a greasy skin, and one dime-shaped painful subcutaneous nodule. Treatment consisted in three exposures to the mercury vapor lamp on successive days. She then had to leave for her Southern home. Her skin had vastly improved, and the nodule, which had received intensive doses, had practically disappeared.

Case 5. D. D., male, 55. Private patient, referred by Dr. E. H. Stott, of Cohasset. Diagnosis, lichen tropicus. Patient had an eruption, more or less generalized, characterized by excessive pruritus and by discrete pin-head sized papules and vesicles of follicular origin. The interfollicular skin areas were moderately erythematous and without any infiltration or elevation. The eruption always occurred in the summer and always resisted treatment. It was midsummer when we saw the patient; eight biweekly exposures to the Alpine lamp were given. His skin tanned rapidly and the eruption cleared up. For the rest of the summer he was free from the disease.

Case 6. J. K., age 27. Private patient, referred by an insurance company. Diagnosis, acute papular vesicular eczema (trade dermatosis). This patient presented an eruption of an aggressively itchy nature, involving his whole body, and characterized by pin-point to pin-head sized papules and vesicles on an inflammatory base. Upon the extremities, the eruption was pustular in type, upon the thighs were innumerable discrete papules and vesicles; the whole body was excoriated by the finger nails. Insomnia and alcohol had aggravated his condition. Treatment in this case consisted in 16 exposures to the ultra-violet lamp three times a week, aided and abetted by an ichthyolized paste and alkalies internally. The condition rapidly cleared up. Pruritus was quickly banished by the Alpine lamp.

Case 7. A. M., age 27. Male. Private patient, referred by Dr. A. McKnight Frazer. Diagnosis, pityriasis rosea. Duration, four days. The eruption commenced as a "sentinel spot" on the lower abdomen and was discrete and moderately itchy. The abdomen, back, chest, thighs and arms were covered with a macular eruption, pinkish at the periphery, and pinkish yellow in the center and covered with a fine scale. This patient was given one inten-

sive treatment with the ultra-violet lamp. He never returned, but Dr. Frazer reports that the rash cleared up so rapidly that the patient decided that further treatment was unnecessary.

CASE 8. A. A., age 52. Female. Private patient. Diagnosis, varicose ulcer of the leg. This patient presented a chronic painful ulcer on the inner side and middle third of the leg, of six months' duration. The ulcers were fairly shallow without undermining (with a granulating base). Ten bi-weekly exposures to the mercury vapor lamp combined with zinc oxide adhesive plaster strapping, and an A. C. E. bandage completely cured it.

CASE 9. W. B., age 37. Male. Diagnosis, ulceration and cellulitis of the hand. Referred by Dr. H. L. McDonald of Malden. Duration of the lesion was five months. Following an injury to the thumb of the right hand, this patient developed palmar cellulitis, which was opened and drained. Despite excellent treatment the condition would not heal. Five months after the accident he presented an ulcer three inches long by one inch wide, covered with devitalized honeycombed epidermis and exuberant granulations, exuding a purulent discharge. A thorough curettage, followed by daily exposure to the ultra-violet light healed the condition in one month.

CASE 10. M. M., age 45. Female. Private patient, referred by Dr. John T. Bottomley. Diagnosis, erythema multiforme. This patient had an intensely pruritic eruption, covering the whole body except the face and characterized by discrete pin-head sized vesicles upon an erythematous base. The cause of the disease was discovered and eliminated, but progress towards recovery was slow until the ultra-violet light was used. Two exposures were given, generalized radiation. The rash vanished after the second application. Calamine lotion externally and alkalies internally helped in the cure, but were slow until the ultra-violet rays were used.

CASE 11. J. C., age 38. Male. Private patient. Diagnosis, lupus erythematosus. This patient presented a discoid eruption on the left cheek, characterized by central scarring and atrophy and patent follicular orifices. Duration of disease, 10 years. It had formerly been diagnosed as eczema and failed to respond to treatment. Treatment was commenced with the mercury vapor light. Twenty-seven intense applications have reduced the eruption to practically nil. There is a fine white scar, less than that which would have been resultant from carbon dioxide snow.

CASE 12. J. M., age 25. Male. Private patient, referred by Dr. Fielding .of Worcester, Diagnosis, alopecia areata. This patient presented a clear-cut alopecia areata, *i. e.* about 12 round, completely bald areas. Causation unknown. Under Alpine lamp therapy upon every bald area, except one, the hair rapidly grew. Five exposures achieved this result. The remaining spot was slower to return to normal.

CASE 13. R. B., age 22. Male. Diagnosis, pityriasis rosea. Patient applied for treatment two weeks after appearance of the rash, which covered the whole body, thighs and arms. Four exposures to the Alpine lamp were given. The skin was perfectly clear in one week. Intense doses were given.

In conclusion we wish to draw attention to the value of the mercury vapor lamp in many cutaneous diseases. We do not regard it as a panacea for all ills. For a certain number it is unrivalled.

THE PULMONIC AREA OF THE HEART AS AN INDEX OF CARDIO-PULMONARY CIRCULATORY DISTURBANCE.

BY JAMES A. HONEIJ, M.D., BOSTON.

IN the examination of patients to determine the functional capacity of the heart or lungs, fluoroscopy has given us one of the most accurate as well as most simple methods. It is my opinion that all cases of disease or questionable disease of the thoracic cavity cannot be considered complete without fluoroscopic examination.

A certain group of cases give easy and positive results on ordinary physical examination of the chest and, on the other hand, a second group of acute cases, especially in pneumonia, make prolonged examination undesirable. These two classes cannot well be considered here. But there is a very large group of cases which demands careful attention and in which functional tests are important. These can be grouped as follows:

Tuberculosis.
Early mild pneumonias.
Post-pneumonias.
Semi-acute respiratory infections in the aged.
Anemic cases with general debility and with indefinite cause.
Cardiac cases, simple acute dilation, most often seen in young patients.
Cardiac cases with incomplete compensation.

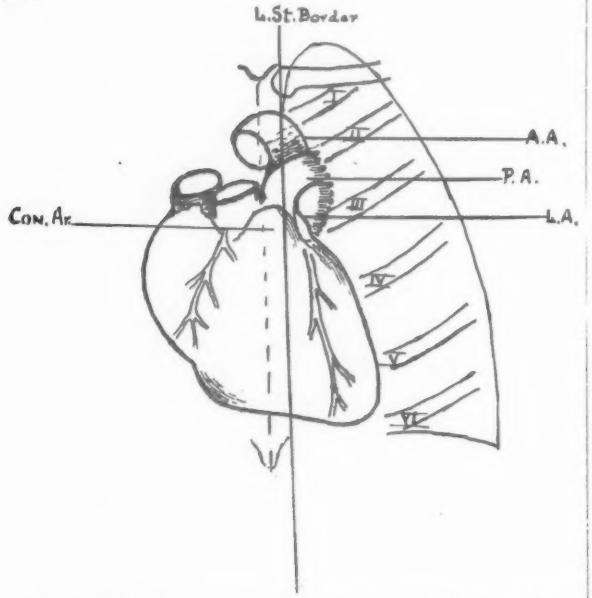
These cases that show sufficient disturbance of the cardio-pulmonary circulatory system have been studied by fluoroscopy to determine the worth, if any, of the following sign to be described.

Radiographically considered, the heart in outline from the anterior posterior aspect appears as a series of arcs (see diagram 2): on the right

the aortic (ascending) arc, and below it the right auricular arc; the latter is the larger. On the left the aortic arc again shows. Just below it is the pulmonic arc, and below this a large arc representing the left ventricle. Sometimes there is seen a small arc between the pulmonic and ventricular arcs—this is the outline of the left auricle. The pulmonic arc is seen between the second and third ribs on the left.

Anatomically considered the pulmonary artery arises from the summit of the *conus arteriosus* (see diagram) of the right ventricle, approximately in a line with the third costal cartilage. It ascends vertically and overlaps the left edge of the sternal line for the greater part of its upward course and then takes a left angle curve to the lung at about, or slightly above, the second costal cartilage. It is partly covered at its base by the auricular appendage. The pulmonary artery crosses in front of and lies above the pulmonary vein. Above it, near its origin,

No.1



No. 1.—Partly diagrammatic to show position of pulmonic artery (P. A.), auricular appendage (L. A.), conus arteriosus (Con. Ar.) to the left sternal border (perpendicular line) and to the ribs and spaces. The zone of reaction is shown as shaded curved line in the second space.

lies the aorta. The *conus arteriosus*, the first portion of the pulmonary artery and the auricular appendage are all in close relationship in a very small area. The base of the vein adds to the density of the shadow of the hilus.

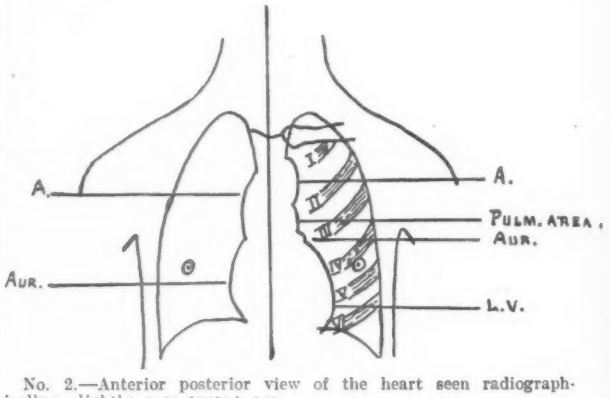
Physiologically considered there are many points regarding intra-thoracic pressure, cardiac pressure and functional changes in the heart that have a bearing on our question.

"In consequence of the high pressure established within the arteries by the previous heart beats, the blood flows steadily through the arterioles, capillaries, and veins, into the right heart and similarly the pressure in the pulmonary artery causes a partial emptying of this vessel with its branches through the pulmonary capillaries into the left heart. The flow into the heart is assisted by the elastic retraction of the lungs, which causes a negative pressure in the structures between them and the chest wall, so that the blood is sucked from the other parts of the body towards the thorax" (Starling).

Starling further states that there is positive pressure with expiration that may amount to +87 mm., if forced. If this statement is accepted it must follow then that this pressure is further increased by continuous cough as practised in this test. "At the height of inspiration the blood contained in the lungs is almost 1-12th of the whole blood in the body. This amount is diminished during expiration to between 1-15th and 1-18th." (Starling).

It is our expiratory effort, therefore, that is necessary in this test and which in turn increases our heart load.

No. 2.



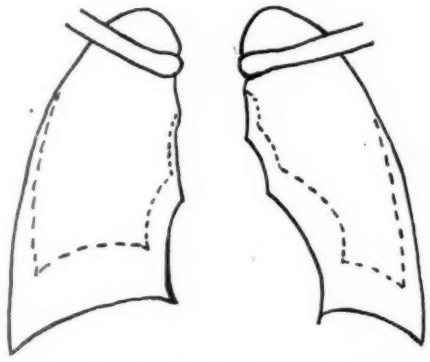
No. 2.—Anterior posterior view of the heart seen radiographically; slightly accentuated arcs.

The dilated pulmonic area, spoken of radiographically, very frequently is considered as a concomitant sign in cases of active tuberculosis or such pulmonary conditions where stress is placed on the pulmonic vessels and conus when the pulmonary circulation is impaired.

In another paper on the dilatation of the pulmonic area of the heart and its significance I have considered the causes that may produce dilatation of the pulmonic area of the heart. This area lies just above the left auricular outline or portion of the heart when viewed from the anterior position between the second and third ribs, but which does not show on the right for obvious reasons (see diagram). On the right, however, there is a slight although corresponding reaction in the hilus area but not as visible or as important as on the left. This reaction or sign is best described as an increase in density and size of the pulmonic area but in reality it is more than this. In the average case in which there is a reaction, the curve of the pulmonic area is very definite, and in the cases where the heart is impaired, and in turn the pul-

monic circulation, this curve becomes greater so that there results, to a varying extent, a bulging with increasing density visible mostly on the left of the mediastinum at the level of the second rib and space, sometimes as large as a small orange. The greater the impairment of the cardio-pulmonary circulation, the greater is the dilatation of the pulmonic area and increase of density of this area. This reaction, however, is not visible during deep inspiration and sometimes barely noticeable during normal respiration. The reaction is definitely obtained and its degree estimated on coughing. The patient should be made to cough in fairly rapid succession—three to five times—without inspiratory effort between coughs. As the patient coughs attention is directed to the pulmonic area which immediately grows denser and denser and larger and larger as the air in the lungs is expelled. After coughing the patient

No. 3.



No. 3.—Lungs and heart outlines in inspiration and expiration (dotted lines).

is told to take a deep, full breath and the aeration—transparency—of the lung is contrasted before the test is repeated. As the test is somewhat severe great care should be taken with active pulmonary cases and especially cases that have had a history of hemorrhage.

The basis for considering this reaction as a test was suggested by the following fact. That in acute infectious diseases the dilatation of the pulmonic area has been noted by some investigators and considered to have a definite relationship to the embarrassment of heart and disturbance of pulmonary circulation. It was especially noted by the writer during the epidemic of influenza, especially in severe and acute cases.

Its relationship to diseases of the heart and its importance is brought out by many writers. Osler states that stenosis of the pulmonary orifice is one of the commonest and most important of congenital heart affections and that in such cases pulmonary tuberculosis is a very common cause of death. Presumably Osler associated the two conditions, and this is the point which bears on our problem. Osler also states that stenosis of the *conus arteriosus* of the right ventricle exists in a considerable proportion of the cases of obstruction at the pulmonary orifice. We have here, presumably, three conditions that may have a relation to each other. Broadbent's observation has also an interesting point in connection with our question. In speaking of murmurs of the pulmonic area, he states, that they may occasionally be due to vibrations caused by the contact of the *conus arteriosus* with the chest wall. He states further that he has known robust men with such murmurs and he has never known such a murmur to develop into cardiac disease. "The causation of such a murmur is apparently as follows: Usually the *conus arteriosus* of the pulmonary artery is covered by a thin edge of the overlapping left lung. In the cases under consideration the covering by lung is incomplete and a part of the conus comes into contact with the chest wall, and during systole is flattened more or less against the chest wall. An eddy is thus formed in the current of blood rushing into the pulmonary artery, which gives rise to a murmur. Evidence in support of this explanation is afforded by the fact that the murmur usually disappears when the patient is told to take a deep breath and hold it, as a cushion of lung is brought over the *conus arteriosus* between it and the chest wall. The result is the more striking if the murmur happens to be loud and vibratory." Our particular interest in Broadbent's statement lies in the fact that deep breathing caused this murmur to disappear. We can assume Broadbent to be correct in his hypothesis but we might consider also whether relief of cardiac pressure may not have been a factor also; or why did the murmur not disappear and reappear on ordinary breathing if Broadbent's statement is wholly correct.

Furthermore, the studies of Vaquez and Bordet show that in many forms of cardiac disease, especially those conditions in which the mitral valve is affected, dilatation of the pulmonic area or arc is common. "Moreover, an exaggeration of the upper part of the median arc corresponding to a dilatation of the pulmonary artery is often noted, due, apparently, to the high tension of the smaller blood vessels." (Vaquez and Bordet). This suggested that a compensatory condition was present and that the pulmonic area took up the burden because of impairment of the mitral valve or left heart, and that in consequence it was of diagnostic importance and might be brought out in fluoroscopic examination.

This was immediately put into practice, at first in pulmonary cases where it was thought an index of the stage or degree of congestion might be determined, and, therefore, be of aid in the early diagnosis of tuberculosis; and later the sign was found to be present in cases where both the circulation of the lungs was affected

and cardiac embarrassment was present. The comparative values in these cases will be reported later. At present I am convinced that the dilatation and the successive increase in the arc of the pulmonic area, and the surrounding density due to congestion, are signs of value in cardiac cases and probably of considerable value in pulmonary congestion.

The basis for considering this question seems logical and may be explained as follows: The narrowing or constricting of the numerous arterial branches to their minutest unit in the lungs must cause a marked increase in the resistance to the flow of blood. This increased resistance is compensated for by the heart in an increase in its propelling force, and in turn causes a dilatation of certain or all portions of the heart. Thin walled portions, such as the *conus arteriosus*, will probably respond more quickly than other portions to a resistance in the lungs; and secondly, the root of the pulmonary artery and its immediate structures will take up the same resistance before the heart itself responds. Part of the proof of this assertion lies in the fact that under inspiration immediately following the test, the pulmonic reaction disappears exceedingly rapidly—indicating an immediate relief of pressure in the lungs, and relief from the pressure of the propelling stream from the heart. Obviously, therefore, when the heart is impaired, and the pulmonary circulation sluggish, we have two factors which increase materially the conditions which give rise to dilatation of the pulmonary artery and *conus arteriosus*, and which in turn produce our sign, dilatation of the pulmonic area.

The act of respiration and its effect on the heart can be seen by referring to Diagram No. 3. The lung fields are decreased, the heart is compressed and lateral bulging and an increase of the arcs are seen definitely. In coughing, the act itself is more sudden and forceful and the effects on both lungs and heart is greater by many times than mere expiration. By the continued coughing greater pressure is brought upon the lungs (greater resistance) and a greater filling of the heart ensues at the same time. The continued pressure, therefore, causes exaggeration of the lines as shown on the diagram.

After this paper had been completed my attention was drawn by White (THE BOSTON MEDICAL AND SURGICAL JOURNAL, March 29, 1923) to Groedel's article discussing cardiac function. White, quoting Groedel, states that "one point of interest that he brings up is the finding of a dark shadow in the hilus region of the lung, indicating stagnation in the circulation, which he reports as the only early sign of failing compensation of the heart." This seems to point to a research along similar lines but from a different point of view.

CONCLUSIONS.

1. The pulmonic area of the heart, fluoroscopically seen, presents certain changes in outline, size and density under certain conditions affecting heart and lungs.
2. This pulmonic sign is a reliable index of cardiac embarrassment.
3. It varies according to the degree of disturbance of cardio-pulmonary circulatory function.

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The New England Surgical Society

BUSINESS MEETING.

SEPTEMBER 22, 1922.

The President, Dr. Charles A. Porter, called the meeting to order at 9. A. M.

On motion of Dr. Lahey, duly seconded and carried, the reading of the minutes of the last annual meeting was dispensed with.

The Secretary read telegrams regretting inability to attend the meeting, from the following: Dr. Peters, Bangor; Dr. George Magrath, Boston; Dr. J. C. Hubbard, Boston; Dr. Ernest Wells, Hartford; Dr. David Cheever, Boston, and Dr. Homer Gage, Worcester.

The President: It has been recommended that a change be made in Article 3 of the By-Laws to the effect that, in addition to the other officers of the Society there be a recorder (appointed this year by the President) who must reside in or near Boston. It shall be his duty to edit reports and supervise publication of the transactions.

A motion that a recorder be appointed was made and carried.

The President appointed Dr. John B. Blake of Boston to serve as recorder.

The President: The Executive Committee has for some time felt that the information in regard to the eligibility of applicants has frequently been inadequate. A lack of knowledge about some men would be cleared up by letters to the Executive Council.

Dr. D. F. Jones, Boston: I move that a letter from each member signing the application blank of a candidate be required.

It was so voted.

The Secretary: The list of applicants to be voted on, for membership, as read by the Secretary was as follows: Robert Cochrane, Boston; Alan Davidson, St. Albans, Vt.; Samuel Clark Harvey, New Haven; Stephen Rushmore, Boston; James W. Jameson, Concord, N. H.; for

honorary membership—William F. Hazelton, Bellows Falls, Vt., and Thomas Kittredge, Salem, Mass.

The above applicants were elected unanimously by ballot.

Dr. James S. Stone: I move that the Society suggest that the Executive Committee invite men to join the Society rather than have men apply through members, not that they cannot be nominated by members but that the Executive Committee consider and invite men to become members of the Society.

The President: I would like to have an expression of opinion on Dr. Stone's suggestion.

Dr. D. F. Jones: Can't the Executive Committee do that now if they want to?

The President: Yes; but that would impose a new duty on the Executive Committee; to go out and find men. The attitude in the past has been a passive one rather than an active one.

Dr. E. L. Hunt: Wouldn't an invitation be the equivalent of election?

The President: No; the Society would vote on the men, but the duty of the Executive Committee would be to find new, eligible members.

The Secretary: I have here five letters from men in different parts of New England, requesting application blanks.

Application blanks are sent out to these men, then references are sought from members of the Society in the district or State from which the applicants come. These requests for application blanks come in frequently from men who have not been mentioned by members of the Society in the district or State where the applicants reside.

Dr. John M. Gile: It seems to me that Dr. Stone's suggestion is well taken inasmuch as the Secretary has some five names which have been sent in without recommendation from fellows. It seems that these might be the men you most desire. I speak in favor of Dr. Stone's suggestion.

Dr. D. F. Jones: It seems to me that the men should be proposed by the members of the Society.

The Secretary: A man must be endorsed by three members of the Society or the application will not be brought up.

Dr. D. F. Jones: Why not have the members ask for the application blanks?

Dr. Phippen: It seems to me a man should consider it a privilege to be asked to join, and, therefore, Dr. Stone's suggestion is a good one.

Dr. H. G. Stetson: Does it ever happen that eligible men, desirable men, do not belong to the Society, who ought to belong?

The President: Yes.

Dr. Stetson: It seems to me that such men should be invited to join the Society. I think Dr. Stone's suggestion is an excellent one.

Dr. Stone's motion seconded (by Dr. Stetson).

The President: Shall we enlarge the powers of the Executive Committee?

Dr. F. H. Lahey: It seems to me that at present it is up to the whole Society if there are eligible men who should join. I don't see any particular plan in the way of additional work for the Executive Committee. If we are interested in the progress of this Society, we have a right to propose new members.

Dr. F. H. Lahey: I do believe that there should be some definite ruling that no application should be made directly by an individual to this Society—that his proposal should come only from a member of the Society.

Dr. D. F. Jones: It seems to me that Dr. Lahey's suggestion is a good one.

Dr. A. L. Chute: It seems to me that it places the Executive Committee in an embarrassing position. I believe that our present machinery is adequate, and I move that the motion be laid on the table.

Dr. Chute's motion was seconded and carried.

Dr. F. H. Lahey: I move that the application blanks be sent only to members of the Society for proposal of names for membership to the Society. It was so voted.

Dr. John M. Gile, Chairman of the Nominating Committee, reported the following nominations:

For President: Dr. John F. Thompson, Portland.
For Vice-President: Dr. Lyman Allen, Burlington.
For Secretary: Dr. P. E. Truesdale, Fall River.
For Treasurer: Dr. P. P. Johnson, Beverly.

Dr. A. L. Chute: I move that the Secretary be instructed to cast one ballot for the election of the officers nominated.

Motion seconded; carried. Ballot cast.

Later on a motion was made that the President appoint a Committee (number not stated) with Dr. R. J. Graves as Chairman, to make a study of the subject of "traumatic" hernia and report at the next annual meeting.

Motion was seconded and carried, and the matter of the appointment of the Committee was left with the President who appointed the following: Dr. R. J. Graves, Chairman; Dr. Homer Gage, Dr. Frederic Cotton, Dr. Arthur T. Jones and Dr. Halbert G. Stetson.

Business meeting adjourned.

MEETING AND DINNER.

ON BOARD STEAMBOAT "TICONDEROGA"
SEPTEMBER 23, 1922.

Dr. Francis S. Watson of Boston gave a talk on his impressions, political, economic and so-

cial, of the countries of Europe from a stay of eighteen months over there. (Taken down by stenographer).

The President, Dr. Charles A. Porter, read the President's address. (from ms.)

Dr. Walter P. Bowers, Clinton, spoke upon the subject of "A New England Medical Society." His talk was discussed by Drs. F. B. Lund, Dr. Herbert L. Smith, Dr. D. F. Jones, and Dr. W. P. Bowers. (taken down by stenographer.)

NEW WRINKLES IN SURGERY.

"A Method for the Introduction of Radium Needles into Tumors of the Bladder."*

BY JOHN H. CUNNINGHAM, M.D., BOSTON.

The successful treatment of tumors of the urinary bladder is one of the most difficult problems in urology.

The perfection of cystoscopy technique has made possible, in most instances, the differentiation between benign and malignant tumors, yet in some instances this differentiation, by visual appearance, is not always possible. Moreover it has become an established fact that benign bladder growths are potentially malignant; are often multiple, and recurrences are common and often rapid following any form of treatment. When the growth is unquestionably malignant, metastases may have taken place before the diagnosis is made, and renal retention due to ureteral obstruction by the growth, is not an unusual occurrence, because of the predilection of malignant bladder tumors to develop on or about the trigone and the ureteral openings. These features of tumors of the bladder, both benign and malignant, present, therefore, more than the ordinary complexity, with a consequently natural divergence of opinion in regard to the best course of treatment.

The removal of benign growths by clamping the pedicle and cutting away the growth either by the knife or cautery is commonly followed by recurrences, often multiple, and implantation of the tumor cells in the suprapubic wound during operation is not an infrequent occurrence.

In the year 1910 Bier advocated fulguration of such growths through the cystoscope, and by this means single or multiple benign growths can be destroyed under local anaesthesia, following which any recurrences can be likewise dealt with. This non-operative method has with good reasoning supplanted operations for benign bladder tumors. There is abundant evidence, however, to prove that fulguration is only applicable to benign tumors and has no curative effects when the growth is infiltrating carcinoma. Likewise there are some papilloma without apparent infiltrating character which are resistant to fulguration, even when the tumor is benign, which, since the employment of radium, have responded to this later form of treatment or, following a dose of radium, respond readily to fulguration.

There remains, however, the group of infiltrating carcinomatous growths about the treatment of which group there is the greatest divergence of opinion. Those advocating resection of that portion of the bladder wall involved, together with a generous margin about the growth and transplantation of the ureter when necessary to remove the entire growth, are confronted with a rather high mortality from the operation; the difficulty in gaining the necessary margin of healthy tissue about the growth in some instances; implantation of the carcinomatous cells in the field of operation; not being able to deal with metastases and the frequency of recurrences following this procedure.

With the more extensive experience with radium during the past few years and the appreciation of the difficulty of a satisfactory radical resection of the bladder growth, and the frequent recurrence of the disease, has led some to give up bladder resection for radium implantation into such tumors through the suprapubic approach, employing either radium emanations or the radium element. Others for the same reason have employed the X-ray in massive doses to bring about a destruction of these malignant tumors in the same way as does radium, but without the necessity of an operation. While beneficial results follow both the employment of radium and X-ray, the therapeutic features of which are the same, the X-ray apparatus must be able to develop two hundred thousand volts to produce the same therapeutic value as does radium and such machines are so few that radium at the present time is more generally in use.

This brief survey of the important features of bladder tumors and their treatment is sufficient to show the difficulties of the successful handling of the problem.

To summarize the reader's present views in regard to the handling of bladder tumors they are briefly as follows: To employ fulguration in all benign bladder growths. If they are resistant to fulguration, to implant radium by means of the device to be described and subsequently employ fulguration. If the growth is malignant and so small, or so located, as to permit a liberal margin of healthy bladder to be resected about the growth, an extensive resection, usually with ureter resection and transplantation with implantation of radium, at the time of operation, along the line of bladder resection, is I believe, the best course. If, however, the bladder growth is too extensive to permit of a complete resection with a liberal margin of healthy

*Read before the New England Surgical Society, Burlington, Vt., September 22, 1922.

tissue about the growth, any attempt at such an operation is poor surgery. These patients have done better, in my hands, with a suprapubic cystotomy and the implantation of radium needles in the growth, giving a large initial radiation, and subsequently treating the disease by local radium application through the suprapubic opening and through the rectum. It has been rare, however, that the growth has been so satisfactorily destroyed by this procedure as to permit the closure of the suprapubic wound, but this has occurred in a few instances and in those with not so favorable an outcome are relieved of the distressing urinary symptoms because of the suprapubic drainage.

With recurrent carcinoma of the bladder, further resection is usually out of the question, unless the recurrence is on the free portion of the bladder.

With carcinoma of the bladder, like carcinoma in other regions, the patient should be kept under careful observation. Cystoscopic investigation should be made at stated intevrals, and with the first signs of recurrence radium needles or radium are employed in the cystoscope, as will be referred to later, and the base of the diseased area radiated by placing radium beneath the tumor's base through the rectum. If the recurrences are too extensive to be controlled by radium implantation through the cystoscope, nothing short of a suprapubic drainage, facilitating more extensive radium implantation, is advisable.

The device about to be described was devised for the purpose of implanting radium into benign growths which are resistant to fulguration and into the small malignant growths which appear as recurrences following bladder resection, and occasionally into larger growths, where an operation is inadvisable for any reason; it being a well-established fact that malignant tumors are much more efficaciously treated by the insertion of radium into the tumor mass than by surface applications.

With the exception of a special device to implant radium emanations into tumors of the bladder and Beurger's method, all other instruments employed for radium treatment of malignant tumors of the urinary bladder, by way of the urethra, have been employed for the purpose of applying radium to the surface of the tumor mass rather than within its substance.

In developing the present instrument there has been a desire to avoid making a special cystoscope for the purpose of implanting the radium needles within the tumor. Instead, the new device can be used through the Brown-Beurger operating cystoscope, as are the other instruments commonly employed with this instrument. There is, however, an instrument with a heavier deflector, made by Wappler & Co., which is admirably suited for the employment of this needle device.

FIG. 1.—Shows radium needles (also employed for internal radiation of carcinoma of the prostate), screwed into the metal block mounted on the flexible shaft.

The *device* itself (Fig. 1) consists of a solid metal block mounted on a flexible shaft, similar to the shaft employed in other cystoscopic operating instruments. Into this metal block are screwed two radium needles which contain an amount of radium up to 15 milligrams; the same type of needle as employed in the internal radiation of carcinoma of the prostate, so that the needles employed for one may be employed for the other purpose. The device constitutes a small fork which may be plunged into the tumor mass through the Brown-Beurger operating cystoscope (Fig. 2 and Fig. 3), and the cystoscope "fixed" by the employment of a "mechanical hand." The "mechanical hand" already on the market and pictured in Dr. Hugh Young's

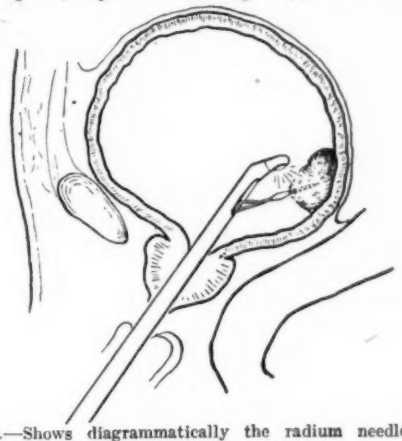

FIG. 2.—Shows diagrammatically the radium needles inserted into the bladder tumor through the cystoscope.

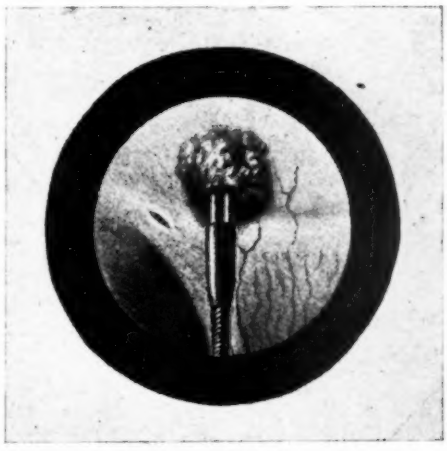

FIG. 3.—Shows diagrammatically the radium needles inserted into the tumor mass.

article, (Technique of Radium Treatment of Cancer of the Prostate and Seminal Vesicles; *Surgery, Gynecology and Obstetrics*, January, 1922, page 93), being most satisfactory for the purpose.

The *technique* of application of the new device differs but little from that employed in connection with the various cystoscopic operating instruments, the only different feature being that the radium device is too large to be passed through the cystoscope while the optical tube is in position. For that reason, following the irrigation of the bladder through the irrigating sheath, the radium instrument must first be passed through the irrigating sheath and guided out of the cystoscope into the bladder by previously introducing the flexible metal guide (Fig. 4-A) along which the radium device is passed.

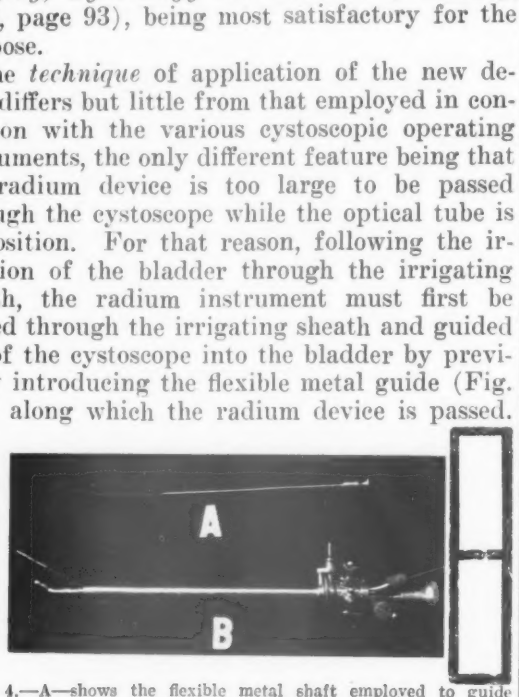

FIG. 4.—A—shows the flexible metal shaft employed to guide the radium device out of the cystoscope into the bladder.
B—the Brown-Beurger operating cystoscope with the radium device in position.

The flexible shaft is then threaded on to the optical tube as it is passed into the irrigating shaft. The bladder is then distended and the radium needles manipulated in the same manner as any of the operating cystoscopic instruments, (Fig. 4-B).

DR. P. E. TRUE-DALE, Fall River (reporting for Dr. R. W. French): In the absence of Dr. French I wish to present his idea, which consists of the use of the common empyema rubber drain as an anal button, to relieve gaseous distention in the colon. The button has a long flange and is placed in the anus after abdominal operations, particularly those operations on the large intestine where there is a liability to rupture of the suture line from gaseous distention. In a very silent way this button speaks for itself. It remains in place very nicely, without suture. The rectal sphincter is kept relaxed. If it slips out it can be turned around. If it slips in, the smaller flange can be made larger. Its advantages are numerous. Its drawbacks are few.

DR. FREDERICK V. HUSSEY, Providence, read from manuscript on "Preoperative and Postoperative Treatment of Toxic Myocarditis Associated with Gall-Bladder Disease."

DR. CHARLES A. PORTER, Boston: Wrinkle 1 is applying Dr. Smith's method of acute flexion of the elbow in fractures, to fractures of the middle phalanx of the finger. After reduction the bone can be kept in alignment with great ease and comfort to the patient by acutely flexing the third phalanx on the first, and binding the two together by means of adhesive plaster. This is a minimum dressing for this injury, and I have found it most satisfactory.

My second wrinkle is a skin graft in two stages. I was led to adopt this method as a result of a large experience in x-ray burns, in which, after excision of the lesion, I found it necessary to wait a long time for the bleeding to stop. Also, if the skin must be excised over tendons or fascia, immediate graft is not apt to be successful. I therefore excise, under gas and oxygen and apply sterile bandage cloth with pressure. After 48 to 72 hours, again under gas and oxygen, the bandage is removed, and the wound washed with hot salt solution. In a few minutes the bleeding will stop, and the commencing granulations can be seen from the edges of tendons or from the fascia. A Thiersch graft can now be applied with the usual technic and with almost guaranteed success. If a longer period elapses before the graft is applied, slight infection from the margins of the wound may occur.

DR. MICHAEL F. FALLON, Worcester: I bethought me of some catgut which I have been using for years. I can only claim for it economy and, I think, all the requisites necessary for catgut. Each strand of the catgut costs three cents; and after many experiments we have come to the conclusion that both the length and size of the catgut may be appropriate for all operative needs.

Its chief recommendation is that it may be boiled in its nakedness, the same as silk. The catgut is a formalized catgut and there is nothing new about that; but I think I can take cover under the new wrinkle proposition by saying that the method by which it is prepared for boiling is new. I don't think that it has been done previously.

The catgut is cut into desired lengths, 18 to 20 inches, then rolled tightly on glass tubes. Plain catgut No. 00 is soaked in four per cent. formalin solution for 12 hours, after which it is removed from the solution and put under running tepid water for four hours. It is next dried thoroughly in the sun or in a moderately heated oven. Then it is put into a solution of 15 ounces commercial alcohol to one ounce sterile glycerine; and it may be stored in this solution indefinitely, and then one can carry it around with him. It can be boiled for 10 minutes previous to operation, and if there is any left this can be put into a sterile receptacle and used for minor operations by reboiling for five minutes.

Chromicized catgut, Nos. 0, 1, etc., is soaked in four per cent. formalin solution, to which is added 15 grains bichromate of potash to one pint

of solution, also aniline dye, one ounce to the pint. It is soaked for 20 hours, after which it is removed and put under running tepid water for six hours. Then it is dried in the sun or in a moderately heated oven and put into the solution of commercial alcohol, 15 ounces to one ounce sterile glycerine. This solution extracts the water and the excessive formalin from the catgut and also makes it pliable. It can be boiled for 10 minutes previous to operation.

I have come to the use of very small sized catgut. I have in my own experience had chromic catgut knots remain in the field, particularly in hernias, for a long time and eventually do, as a foreign body, start up inflammation.

The chromic gut can be used—we use it for hysterectomy doubled; and the fine gut is used for skin and ligatures. Each strand here is 18 inches long (showing). The economy is apparent. The method of putting it on the spool you will see in the sample which I gave you.

DR. F. H. LAHEY, Boston: Does it get limp and slimy when you boil it?

DR. FALLON: You can boil it for 10 minutes and then you can reboil it. Putting it in glycerine and alcohol makes it pliable, and it is dehydrated by glycerine and alcohol, which also takes the kinks out.

DR. LAHEY: If you boil it, does it get stiff or does it stay pliable?

DR. FALLON: It doesn't stay stiff. Before it is used the nurse should cut it and soak it in tepid sterile water.

DR. P. E. TRUESDALE, Fall River: Will you go over the method of preparation again.

DR. FALLON: The catgut is cut into desired lengths, 18 to 20 inches, then rolled tightly on glass tubes. Plain catgut No. 00 is soaked in four per cent. formalin solution for 12 hours, after which it is removed from the solution and put under running tepid water for four hours. It is next dried thoroughly in the sun or in a moderately heated oven. Then it is put into a solution of 15 ounces commercial alcohol to one ounce sterile glycerine, and it may be stored in this solution indefinitely and then one can carry it around with him. It can be boiled for 10 minutes previous to operation, and if there is any left this can be put into a sterile receptacle and used for minor operations by reboiling for five minutes.

Chromicized catgut, Nos. 0, 1, etc., is soaked in four per cent. formalin in solution, to which is added 15 grains bichromate of potash to one pint of solution, also aniline dye, one ounce to the pint. It is soaked for 20 hours, after which it is removed and put under running tepid water for six hours.

We find a good way to wash it is to put it in a wash bowl and opening the stop a little at the bottom of the bowl, allow running water to run through that for six hours. Then it is dried in the sun or in a moderately heated oven and put into the solution of commercial alcohol, 15 ounces to one ounce sterile glycerine. This solution extracts the water and the excessive formalin from the catgut and also makes it pliable. It can be boiled for 10 minutes previous to operation, and it can be reboiled. We have found that this length of 18 inches is very convenient and avoids waste.

Book Reviews.

Impotency, Sterility, and Artificial Impregnation. By FRANK P. DAVIS, M.D. St. Louis: C. V. Mosby Company. Pp. 168. Price, $2.25.

Among recent medical publications there have been a number of books on the sexual function. The importance of this subject cannot be disputed, but it is questionable whether the general knowledge is much increased by most of the books recently issued. Impotency, Sterility and Artificial Impregnation is a case in point. Apparently the author has had considerable clinical experience with sexual problems. He has read widely, and cannot refrain from pointing every moral by an apt quotation, the source of his quotations varying from the Bible to Havelock Ellis. We wish he would not regard "ova" and "spermatozoa" as the singular forms of these nouns. It shakes our faith in his fundamental training. Aside from this rather minor departure, his attitude is not at all critical. He accepts the most remarkable theories. For example, on page 119, he says, "It has been well established that the sperm cells invade the mucosa and the underlying tissues," and following that he indulges in wide speculation concerning immunologic reactions. A considerable part of the book concerns the rôle of the special senses in relation to the sexual function. A good deal of this reads like the old "family medicine books" found in every farmhouse forty years ago. He hates wealth, tobacco, and coeducation. "The greatest producer of sexual crime and destroyer of virtue ever conceived in the mind of man is the coeducational school" (page 108). Tobacco contributes to the production of a low grade of children. "The children of tobacco smokers are dull and backward" (page 109).

His remarks about sterility are simply a restatement of the work of various men. His chapters on therapeutics are remarkable. The reviewer must confess his ignorance of most of the drugs described—gold, platinum, Avena Sativa, humulus-lupulin, picric acid, pulsatilla, salix nigre aments, nuphar luteum, ignatia, thuja, murix, staphisagria, lycopodium, graphite, and ambergris are some of those said to have potent effects upon sexual disorders. A dilution of 3x seems to be the best form of exhibiting many of them.

Enough said. We wish a Will Hays or a Judge Landis could be placed in charge of the business of publishing medical books, to prevent the appearance of such old wives' stuff as "Impotency, Sterility and Artificial Impregnation."

Oto-Rhino-Laryngology for the Student and Practitioner. By Dr. Georges Laurens. Authorized English translation of the fourth revised French edition by H. Clayton Fox, F.R.C.S. (Irel.) with a forewood contributed by Sir J. Dundas-Grant, M.A., M.D., F.R.C.S. The second English edition with 589 illustrations. New York: William Wood & Co. 1922. Pp. 350.

As stated by the author this manual of over 300 pages, divided into three about equal portions devoted respectively to diseases of the ear, the nose and its accessory sinuses and the throat, including the larynx, is designed as a practical guide for students and general practitioners of medicine. It is not a book of reference for the specialist. Very readable and clearly written, with profuse and excellent illustrations, it gives, in very usable form, the methods of examination and treatment necessary in handling the conditions more commonly met with. Particularly good are the chapters on the nasal sinuses, the larynx and the one describing exercises useful in developing proper nasal respiration. The various medical procedures outlined with methods of using drugs, are most helpful.

The practitioner is told where he should stop and call in the specialist, but it almost seems in many instances as though every known treatment outside of major operating had been tried, and valuable time lost before this is done. Many procedures are recommended for the practitioner to carry out which would seem not possible for a man who had not had extended training, at least in examination and diagnosis. This may be explained, perhaps, by the statement of the author that the book is particularly designed for those practicing where special consultation is not easily available.

Certain methods of treatment advised are not those generally accepted as the best in this part of the country, at least, as opening furuncles of the auditory canal under local anesthesia—"do not allow yourself to be interrupted by the patient's cries and movements (page 53), local anesthesia for paracentesis in children (page 70), reduction of fracture of the nasal bones where there is lateral deformity by external pressure without elevation from within (usually necessary) (page 154), tonsillotomy by morcellement (page 241). On page 112 the diagram showing the location of different infections of nasal origin is incorrectly labeled.

The author speaks many times of the necessity for carefully examining for adenoids when they are suspected of causing trouble, whereas it would seem that their presence might be assumed in children under twelve unless previously operated on, a nasal examination having been found negative.

While taking into consideration these and a few other points of possible disagreement, the book is undoubtedly a useful one and much may be learned from its perusal.

Montaigne and Medicine. By James Spottiswoode Taylor, M.D., F.A.C.S. New York: Paul B. Hoeber. 1923.

The essays forming this monograph have been reviewed at their appearance from time to time in the *Annals of Medical History.* Collected now into a single volume, they fulfil admirably the author's purpose,—"to present together all the facts relating to Montaigne's physical life—his ancestry and offspring, his appearance and make-up, his marriage; to report some of the natural phenomena that interested him; to recite the story of his bodily afflictions and his struggle for health; to set forth his attitude to medicine and the grounds therefor." Lamartine classed Montaigne with Montesquieu as one of the "great republicans of French thought." Taylor's biography presents him as one of the world's great men viewed from the standpoint of the medical profession, not alone clinically, but sympathetically and humanly. It is a fascinating book, by a physician with unusual literary taste, about a famous man of letters whose contact with medicine makes him doubly of interest to physicians.

The Evolution of Public Health Nursing. By Annie M. Brainard. Philadelphia: W. B. Saunders Company. 1922. Price, $3.

In this volume of some 450 pages Miss Brainard, editor of *The Public Health Nurse* for many years, sketches the service to the sick through the centuries, giving with some detail and considerable vividness the story of the development of visiting nursing in England. The beginnings and very rapid growth of visiting nursing in this country are given with enthusiastic appreciation of our pioneers in the movement. The various forms of specialized public health nursing are presented but there is no discussion of the difficulties arising out of the multiplication of such specialization in our big cities or the possibilities of generalized nursing service.

Miss Brainard uses the terms of social service and public health nursing as though they were mutually inclusive but does not define either term. There are some inaccuracies in the later part of the book. Its value would seem to lie in the interesting background it gives rather than with her presentation of the present status of public health nursing in this country.

Current Literature Department.

ABSTRACTORS.

GERARDO M. BALBONI — CHESTER M. JONES
WILLIAM B. BREED — CHARLES D. LAWRENCE
LAURENCE D. CHAPIN — HERMAN A. OSGOOD
AUSTIN W. CHEEVER — FRANCIS W. PALFREY
RANDALL CLIFFORD — EDWARD H. RISLEY
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JOHN B. HAWES, 2D. — JOHN B. SWIFT, JR.
JOHN S. HODGSON — WILDER TILESTON
FRED S. HOPKINS — BRYANT D. WETHERELL

BENIGN AND MALIGNANT GROWTHS OF THE NASOPHARYNX AND THEIR TREATMENT WITH RADIUM.

CROWE and BAYLOR (*Annals of Surgery*, March, 1923) present a very thorough article of 38 pages dealing with all types of growths in these regions, and they find that one outstanding result of the radium treatment of this type of case is the high percentage of cures in the vascular tumors in such an inaccessible region as the nasopharynx, which vascular tumors are not suitable for surgical treatment; but, if not treated, they not only become infected, ulcerate and bleed profusely, but may destroy neighboring structures by pressure and grow into the orbit and the intracranial cavity. No case of carcinoma of the nasopharynx in this series has been cured but in many cases the symptoms have been much relieved. The authors believe that radium has considerable advantage over surgery in this region.

[E. H. R.]

LYMPHATICOSTOMY IN PERITONITIS.

COSTAIN (*Surgery, Gynecology & Obstetrics*, March, 1923), in November, 1922, published the results of experimental research which go to show that there is a fatal absorption through the thoracic duct in diffuse septic peritonitis. This work was carried out experimentally on dogs and it was shown that damage done to the thoracic duct by the operation was overcome by the establishment of a collateral flow of lymph. By tying the thoracic duct at the root of the neck, the absorption of the toxic material from the peritoneal cavity is stopped, and this cuts definitely short those symptoms which are commonly observed in post-operative peritonitis and demonstrates the wonderful ability of the peritoneal cavity to deal with an inflammatory process when not hampered by absorption.

The author claims that lymphaticostomy is not in itself a dangerous procedure, and may serve to save many desperate cases.

[E. H. R.]

RUPTURE OF THE LIVER.

WHITE (*Surgery, Gynecology & Obstetrics*, March, 1923) reports a case of ruptured liver in which he first employed the use of the patient's own blood for re-autotransfusion. He collected the blood found in the peritoneal cavity in a large jar containing 2 per cent. sodium citrate solution and immediately after operation re-injected this into the patient's vein. This would seem a logical and valuable method in certain cases.

The author states that auto-transfusion is indicated in active hemorrhage in the abdomen of such gravity as to jeopardize the life of the patient if no other means are at hand to supply the blood. Contamination of the blood in any manner, either by nature of the injury or in preparation of the blood, contra-indicates its use. Extra-uterine pregnancy would seem to be the ideal indication for auto-transfusion and has been the most frequent condition in which it has been used.

Rupture of the liver, spleen, gunshot wound of the mesentery, the call for speed, the delay in obtaining a donor, justify the use of auto-transfusion. It is felt that blood from a ruptured uterus or from the pleural cavity should not be used for this purpose, although some operators have done so.

Auto-transfusion has a limited field of application but, when indicated, is a great aid in a serious emergency. It seems free from risk. Any blood found in a cavity which is not infected by contamination from a possibly infected uterus or wounds in the intestine is safely used.

[E. H. R.]

BILE-DUCT ANOMALY AS A FACTOR IN THE PATHOGENESIS OF CHOLECYSTITIS.

SEELIG (*Surgery, Gynecology & Obstetrics*, March, 1923), in a short article illustrated by drawings and a case history, points out that an anomalous cystic or common duct undoubtedly often results in pathological conditions in the gall-bladder which would not otherwise be present were the ducts normal in arrangement. This applies both to cholecystitis and cholelithiasis.

[E. H. R.]

EMBOLECTOMY IN THE TREATMENT OF CIRCULATORY DISTURBANCES IN THE EXTREMITIES.

KEY (*Surgery, Gynecology & Obstetrics*, March, 1923) seems to have had a much wider experience in the surgical treatment of circulatory disturbances in the extremities than most surgeons in this country.

He writes a most interesting article in the March number of *Surgery, Gynecology & Obstetrics* on the relief of gangrene by embolectomy. He claims that it is one of the most satisfactory operations that can be performed in suitable cases. It has been made possible largely by the development of blood vessel surgery, especially by such men as Carrel.

He reports ten operations on nine patients, one patient having an embolism in both legs, and has collected fifty-one cases from the literature, large numbers of these being operated on by Swedish surgeons. In no instance has the operation been fully successful when it has been done more than twenty-four hours after the onset of symptoms.

An embolus will lodge most readily where a vessel divides. In the largest number of cases coming to operation, the embolus has been located in the dividing part of certain large vessels, such as the aorta, the common iliac, the common femoral, popliteal and the axillary. If the embolus is not removed in time, it goes through the stage of secondary thrombus building. As a result of this, an embolus which at first does not fully close the lumen of the vessel may later cause a complete obstruction. In cases which come to early operation, it is generally easy to distinguish between the original embolus and the secondary thrombus, but in late cases it is either difficult or impossible. Fresh emboli may occur even after the removal of the primary one.

The symptoms that characterize an embolus are partly subjective and partly objective. The subjective symptoms are: sudden pain, a sensation of cold, and disturbance of sensibility. The objective symptoms are: change in color of the skin, lowering of the temperature, disturbed motility, absence of skin and tendon reflexes, and absence of pulsation. A prick from a needle causes no bleeding. The possi-

bility of palpating an embolus depends upon its locality and the corpulence of the patient.

In removing an embolus, the ideal anaesthetic is that with novocaine and adrenalin. The author has overcome the slippery condition of the gloves which takes place with the use of sterilized vaseline by substituting sodium citrate, which prevents blood clotting and renders technic much easier.

After embolectomy, one should immediately investigate to see whether circulation has been completely restored in the extremity.

The field for this kind of surgery is of course limited, but in properly selected cases the results are eminently satisfactory.

[E. H. R.]

The Causes of Death in Chronic Valvular Disease of the Heart.

Cowan and Rennie (*The Lancet*, Feb. 3, 1923), discussing chronic valvular disease of the heart, found that the commonest cause of cardiac failure in chronic valvular disease was an acute re-infection of the cardiac valves. They found that in 81 cases of chronic valvular disease the cause of failure was in two cases unknown. "In six cases death ensued from causes quite distinct from the cardiac disease. In 11 cases cardiac failure followed the activity of factors outside the heart. Of the other 62 cases, in 49 the heart itself seemed to be the prime factor in the failure, and *in 39 of these an acute endocarditis was present at death.* The commonest cause of cardiac failure in chronic valvular disease seems thus to be an acute re-infection of the cardiac valves. Acute endocarditis is most common in rheumatic patients, and least common in syphilitic patients. Of our 58 cases of acute endocarditis, 19 purely acute and 39 associated with chronic lesions, 32 were rheumatic and only one syphilitic. One patient had suffered from both diseases. The immediate cause of death in cases of chronic valvular disease is varied." [R. C.]

The Relation of Disease of the Gall-Bladder to the Secretory Function of the Stomach and Pancreas.

Griffiths (*The Lancet*, Feb. 10, 1923) gives an interesting and detailed article on gall-bladder disease. He emphasizes the fact that infection of the gall-bladder acting reflexly through the vagus nerve tends to cause hyperchlorhydria and regurgitation; that in some obscure cases of gall-bladder disease, where the cause cannot be found by the ordinary clinical methods, exhaustive examination of the functions of the stomach and the pancreas may lead to a correct diagnosis. [R. C.]

A Fatal Case of Empyema Due to Anaerobic Infection.

Leckie (*Edinburgh Medical Journal*, February, 1923) gives a fatal case of empyema due to anaërobic infection. He summarizes the main points of interest in the case as follows:

1. A case of anaërobic infection of the pleura, under the conditions indicated, has not, as far as the writer knows, occurred before.

2. The infection was communicated directly from the pleura to the lung; and this infection attacked, in the first instance, not the air cells but the interstitial tissue of the lung.

3. Of the two conditions found to be necessary in military experience for the development of this disease, namely fatigue, and destruction of tissue at the point of infection, only the former was present in this case. It is true that some slight pleural thickening at the right base was noted on the first examination, but this, while it may have rendered the pleura less capable of resisting infection, could not be considered to be comparable to destruction of tissue.

4. There seems little doubt that life would have been prolonged, for some short time at least, had the empyema not been opened; for this operation permitted the infection of muscular tissues, where anaërobic organisms grow most rapidly.

5. All the indications point to the conclusion that the disease was due, in this instance, to infection from extensive injury to the gums, which permitted direct absorption of the bacteria into the blood stream. [R. C.]

Malignant Diseases of the Breast.

Morton (*British Medical Journal*, Feb. 3, 1923) discusses in detail the results of his operation in 251 cases of malignant disease of the breast. It is interesting to note that of 120 specially investigated cases, none were treated by x-ray after operation. There were 46 per cent. of these free from local recurrence after three years, and 30.2 per cent. after five years. He found that this compared well with the statistics of a series of cases treated by x-ray, referred to in the *British Medical Journal* (1921, ii, 411). [R. C.]

Aches and Pains of Renal Origin.

Fullerton (*British Medical Journal*, Feb. 24, 1923) discusses at length the various types of pain in different renal conditions. He discusses fully methods of diagnosis and treatment, and is of the opinion that in the large proportion of cases pain is due to distention of the renal pelvis. [R. C.]

Improved Technic for Gastrectomy and Gastro-enterostomy.

Freeman (*Annals of Surgery*, Feb., 1923) describes a very ingenious method of doing gastro-enterostomy and gastrectomy by the use of the ordinary mattress needle used in the manufacture and sewing of mattresses, a smooth steel needle about a foot long.

In gastroenterostomy, the portion of stomach wall and jejunum that are to be used are approximated, and the mattress needle placed well down on either side of these folds, pressing them closely together into two prominent opposed pouches such as are formed when forceps are used. While the needles are held in place by the assistant, a rubber band is wound round their ends on either side tight enough to bring the elasticity of the band into play, and these bands are then clamped with forceps. The operation is then completed in the usual manner. The advantages of the procedure are its simplicity and ease of performance; the lessened amount of injury to the mucous membrane, owing to the mildness of the elastic pressure; and its unformity depending upon the fact that the needles, unlike forceps, are everywhere parallel to each other; the smaller amount of room occupied by the needles as contrasted with forceps; and the unlikelihood of slipping, because the smaller diameter of the needles permits them to sink slightly into the soft tissues. If, however, in exceptional cases slipping is feared, one or both of the needles may be made to catch up a little of the visceral peritoneum in one or more places, which will insure their retaining their positions. The fact that the pouches are pressed firmly together without the intervention of forceps not only facilitates suturing but also does away with the necessity of placing gauze between intestinal loops to prevent soiling.

Like advantages are present in doing gastrectomy. In this operation the needles are made to pierce the stomach wall, and its slipping is impossible.

The method looks simple and efficient, and is probably worthy of trial. [E. H. R.]

THE TREATMENT OF HYDATIFORM MOLE AND CHORIO-EPITHELIOMA, WITH A CONSIDERATION OF THE RELATIVE FREQUENCY OF EACH.

GORDON, O. A. (*Surg., Gyn. and Obstet.*, February, 1923) writes as follows:

Hydatiform degeneration of the chorion is not an infrequent condition.

Actual chorioepithelioma is an extremely rare condition.

The relative malignancy of chorioepithelioma cannot be distinguished by the histological picture alone.

Hydatiform mole should be treated from the standpoint of hemorrhage and sepsis, bearing in mind only the remote possibility of the development of chorioepithelioma.

Manual removal of the hydatiform mole is the method of choice. If the condition of the cervix does not permit this, vaginal hysterotomy should be performed that manual removal may be possible.

Should chorio-epithelioma be suggested by the findings, at the time of the removal of the mole, hysterectomy should follow.

Curettage is a dangerous and practically worthless procedure as a means of diagnosing chorioepithelioma.

Abdominal hysterotomy, in late cases, suspected of chorioepithelioma, is the procedure of preference, as it permits visual examination of the pelvis, as well as the uterine body and endometrium. By late cases I refer to cases with a previous history of pregnancy or hydatiform mole.

Radioactive therapy should be efficacious both as a prophylactic and therapeutic measure in chorioepithelioma.

Bilateral ovarian cystomata accompany both hydatiform mole and chorioepithelioma in over 80 per cent. of the cases.

Bilateral ovarian cystomata in both of these conditions are short-lived, show no signs of malignancy, and undergo spontaneous regression after the removal of the uterine condition. [E. H. R.]

SYMPOSIUM ON CARCINOMA OF THE JAWS, TONGUE, CHEEK AND LIPS: GENERAL PRINCIPLES INVOLVED IN OPERATIONS, AND SUMMARY OF RESULTS OBTAINED.

I. At the Cleveland Clinic: Carcinoma of the Jaws, Tongue, Cheek, and Lips. By GEORGE W. CRILE, M. D., F. A. C. S.

II. At the Mayo Clinic: Carcinoma of the Tongue. By E. S. JUDD, M. D., F. A. C. S., and GORDON B. NEW, M. D.

III. At the Presbyterian Memorial, and Roosevelt Hospitals, New York: Carcinoma of the Cheeks and Lips. By GEORGE E. BREWER, M. D., F. A. C. S.

Discussion by ALBERT J. OCHSNER, M. D., F. A. C. S.; VILRAY PAPIN BLAIR, M. D., F. A. C. S.; DOUGLAS QUICK, M. D., GEORGE P. MULLER, M. D., F. A. C. S., and CHANNING C. SIMMONS, M. D., F. A. C. S. (*Surg., Gyn. and Obstet.*, February, 1923).

The conclusions drawn by the various authors may be summarized in general as follows:

The primary focus may be destroyed by a cautery or removed by excision.

Local excision of only the primary focus of the tongue, lip, and floor of the mouth, leaving the regional lymphatic glands, is as ineffectual as excision of the breast without removal of the regional glands.

Excision of individual lymphatic glands not only does not afford permanent cure, but is usually followed by greater dissemination, and more rapid growth.

The logical technique is a complete block excision of the regional lymphatic system, together with a wide excision of the primary focus.

In operations for cancer of the buccal mucous membranes, a "platter" of underlying bone should be removed, together with the intact growth.

No cancer tissue should be cut or handled.

The inhalation of blood and of wound secretion must be rigidly prevented during and after the operation.

Ether and chloroform should be used with greatest caution, if at all; gas-oxygen combined with local anesthesia, or local anesthesia alone is the choice.

A single treatment with deep, accurately measured x-ray or radium dosage is employed after operation.

The records of operations by my associates and myself include 224 cases of carcinoma of the buccal surfaces—lip, mouth, tongue, jaws, with 6 operative deaths.

A reduction in the number of cases of cancer of the tongue depends on the early recognition and proper treatment of precancerous lesions.

Lesions of the tongue, suspected of being malignant, should be excised for diagnosis, and should not be treated locally.

Improvement in the end-results of treatment of cancer of the tongue depends on early diagnosis, and proper treatment in the early stages of the disease.

With our present knowledge, all patients with operable cancers of the tongue should be given the benefit of surgery, including cauterization of the local lesion, and excision of the glands of the neck. Radium should also be employed in order to give these patients every possible chance.

From the statistics of this report, which I believe to be accurate, it will be seen that the results of surgical treatment of the lip are far superior to those as yet obtained by radium, and that we are not justified at the present time in advising radium treatment in early operable cases. On the other hand, in cancer of the cheek, the results by radium are so evidently in advance of those obtained by operation, that until it can be demonstrated by a series of well-observed three or five year cases, that operation gives equally good results, all cancers arising in the mucous membrane of the cheek should be treated by radium. [E. H. R.]

FORMS OF TUBERCULOUS ARTHRITIS AND THEIR TREATMENT.

WARD, E. (*The Lancet*, Jan. 6, 1923) in a discussion of various forms of tuberculous arthritis and their treatment, suggests a new classification for tuberculous joints. Minor tuberculous arthritis is described. He advises relative rather than absolute immobilization for tuberculous joints, and discusses short cuts in the treatment of tuberculous arthritis. [R. C.]

THE REGENERATION OF THE MENINGES.

SAYAD, WM. Y., and HARVEY, S. C. (*Annals of Surgery*, February, 1923) find, after extensive experimentation on animals, that the defects in the dura of the dog, operatively induced without injury to the adjacent arachnoid, healed rapidly in either one or two weeks, and without the formation of adhesions. [E. H. R.]

STRUCTURE AND FUNCTION OF THE KIDNEY.

SCHWARZ (*Wien. klin. Woch.*, Feb. 1-8, 1923), in a series of biologic observations on renal structure and function, discusses the relation of tubular and vascular diseases of the kidney to the physiologic concentration and dilution of the urine. [R. M. G.]

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THE DEAN OF BOSTON UNIVERSITY SCHOOL OF MEDICINE.

THIS School of Medicine, designated as a Class A institution, has had an honorable history. For many years devoted to the exposition of homeopathic theories, it was also known as progressive in its teaching of the fundamental sciences on which the structure of medicine has been built. Under the leadership of Dean John P. Sutherland it has kept well up in the front ranks of medical schools. It is now entering upon another era in its history under the leadership of Alexander Swanson Begg, who has been elected to the office of Dean, made vacant by the resignation of Dr. Sutherland.

Dr. Begg was born in Council Bluffs, Iowa, May 23, 1881. His father was a Scotch Canadian, who served with the Ohio troops in the Civil War. His mother was of pre-Revolutionary Dutch descent. His primary and secondary training was at Council Bluffs and Des Moines, Iowa, and completed in Ontario, where he passed the matriculation examinations for the Toronto and McGill Universities. His college and medical work was at Drake University, where he received the S.B. degree in 1906 and the M.D. degree in 1907. He had postgraduate work in the Harvard Medical School in the years 1908, 1910, and 1911. He held teaching positions in the Medical School of Drake University prior to its absorption by the University of Iowa.

He was a teaching Fellow at the Harvard Medical School in Histology and Embryology in 1910 and 1911. (On leave of absence.) He returned to the Harvard Medical School as instructor in Comparative Anatomy, his title being subsequently changed to Instructor in Histology and Embryology and Demonstrator in Anatomy.

In 1915 he was engaged in administration work in the Graduate School of Medicine.

In 1921 he was appointed Professor of Anatomy in Boston University School of Medicine.

He is a member of the Massachusetts Medical Society, Norfolk District, the American Association for the Advancement of Science, the American Medical Association, and a member of the Committee on Pedagogics of the Association of American Medical Colleges. He has conducted research work in embryology. He was made Lieutenant in the Medical Reserve Corps in 1916, attended the Infantry Training Camp at Plattsburg, and after helping to form the Boston Examining Board for Examination of Medical Reserve Officers, served on this Board for about a year. He entered active service in May, 1917, in the Department Surgeon's Office in Boston, thence to the office of the Surgeon-General in Washington and became a hospital commander in France.

It will be recognized from this brief account that Dr. Begg brings to the Boston University School of Medicine ability as a teacher and an executive. The problems confronting medical schools are complicated because the recognized requirements demand the expenditure of large amounts of money.

Boston University has many friends. Dr. Begg's success depends largely on material support, for the faculty is united, ambitious, and will coöperate in plans for the future usefulness of the medical school.

TUBERCULOSIS IN CHILDHOOD.

TUBERCULOSIS, still the white plague, is nevertheless on the decline, due largely to the earnest work of those interested and active in its prevention. The various phases and aspects of tuberculosis are being constantly presented to the profession and the laity; the wealth of this material is so great that there is danger that much of it may be ignored through too frequent repetition. A consideration of tuberculosis in childhood is of unquestioned value, however, due both to its paramount importance and to the fact that it differs from adult tuberculosis in many important features that might be overlooked.

This subject has been reviewed by Charles Hendee Smith in the *Bulletin of the New York*

Tuberculosis Association, and the points which he emphasizes are well worth mentioning here.

Dr. Smith feels that the prevalent belief that most children are infected by tuberculosis in the first few years of life, and that, therefore, the tuberculin test is valueless after early infancy, has done much to handicap us in the treatment of tuberculous children, because we start with a false conception of the importance of this infection.

Tubercular infection in the child is by inhalation or ingestion of the bacillus, and a primary local lesion results somewhere—in the tonsil, adenoid, lung or intestine. Soon the regional lymph nodes become infected, and the bacilli find their way into the lymph stream, the blood stream, and the lungs. From the lungs they are carried by the lymphatics to the bronchial lymph nodes, which are, therefore, nearly always involved at an early stage. Further extension depends on the resistance of the child—the lesion may heal, it may remain latent, or it may extend by lymph or blood stream, giving rise to active tuberculosis of bones, joints, meninges or lungs.

It is with the children who are infected but not actively diseased that the most hopeful opportunities for prevention lie, for with proper oversight the latent or initial infection may be arrested and healed. Infants are rarely able to resist the disease and generally die of miliary tuberculosis.

Children over two years of age may reach the latent stage, and with them treatment is fruitful.

Three questions must be answered, according to Dr. Smith, in making a diagnosis with tuberculosis in mind:

1. Has the child been infected with tuberculosis?
2. Is the disease active, latent, or cured?
3. What is the site of the disease?

The tuberculin skin reaction generally answers the first question, regardless of the age of the patient, if the factors of error are excluded, *i.e.:*

1. An overwhelming infection may prevent the reaction.
2. Acute illness occasionally suppresses it.
3. Errors in technique are responsible for many false readings.

Of the tuberculin tests two are now accredited for general use. The epidermal or Von Pirquet test is the easiest to apply and is fairly reliable; the Mantoux or intradermal test requires dilution of the tuberculin and a measured intradermal injection. It is, however, about twice as reliable as the Von Pirquet.

Activity of the infection may be established by the presence of fever, languor, fatigue, anorexia, malnutrition, anemia, hypertrichosis and skin tuberculides or corneal phlyctenules.

Determination of the site of the disease often offers great difficulties, even when it is active and extensive. Pulmonary involvement, comparatively rare between the ages of two and ten, is seen in two main types. In infants it generally starts from the hilus and extends rapidly outward. In older children the disease approaches the adult type. The most common site is in the lymphatic system and is not always easy of diagnosis, even when the cervical nodes are involved. D'Espine's sign and intercapsular dulness are of value in making a diagnosis of infection of the bronchial nodes.

X-ray examination is often of value but presents many difficulties, due to the site of the nodes, which are marked by shadows of the heart, vessels, sternum and vertebrae.

The treatment of the child is like that of the adult, but remembering that the régime, hygiene and diet differ for the sick as for the well child. With marked activity of the disease, rest in bed is essential. Even if it is comparatively quiescent he should be protected from excessive fatigue.

"Tuberculosis is not a universal infection but on the decline, in this country at least. We must learn to recognize and treat it in its early or latent stages in childhood, when we have our greatest hope of curing the individual and of stamping out the disease."

"Children have a fairly good resistance normally, and if watched and cared for will generally conquer the infection, if they escape the meningeal, bone and other accidents which cannot be foreseen."

In this discussion differentiation between human and bovine tuberculosis is not made, for once the infection has gained access to the body the procedure is the same in both cases. In prevention of this infection, however, it is of the utmost importance to keep ever in mind the possibility of bovine infection, knowing that over 30 per cent. of the cases of tuberculosis in children under the age of 12 years have been shown to be of bovine origin.

MEETING OF THE NEW ENGLAND SECTION OF THE AMERICAN COLLEGE OF SURGEONS.

THIS third group meeting of members of the New England Section held in Worcester, May 15 and 16, was, according to Allan Craig, M.D., Associate Director of the College, the best meeting of this character ever held.

There have been 71 group meetings held in the United States and Canada. Registration in Worcester showed the presence of 183 Fellows. In addition, there were many members of the Worcester District Medical Society, hospital trustees and superintendents and representatives of nursing organizations.

The Worcester City, The Memorial, St. Vincent, Hahnemann and the State Hospitals were thrown open to the visitors during the forenoons. Attendance at these clinics was divided

and no one of them was overcrowded, so that the demonstrations could be witnessed without discomfort.

The operations performed were representative of the everyday work in large hospitals, and demonstrated the careful attention to accepted methods of technic of the surgeons and operating room forces. It may be said that comparatively few spectacular operations are likely to be shown before surgical assemblies of the present day, for the unusual cases and exceptional operations of a generation or more ago are now found more or less regularly in the services of any fairly good-sized hospital. Surgery has become more generally standardized than our pioneers ever expected. This more general uniformity is the result of frequent meetings and interchange of opinions; patients apply earlier for relief, and it is hard to find cases deviating from the usual, of sufficient number to attract by reason of rarity. The American College of Surgeons has contributed a great deal to the general excellence of surgery, for it would be exceptional to find an unrecognized man on any important surgical staff.

The laboratory demonstrations were interesting to many, for here were seen the latest methods of scientific study of cases and pathological material. Codman's study of bone sarcoma, shown at the Worcester City Hospital, is a definite contribution to science.

Aside from the strictly professional demonstrations, the apparent aim of the promoters of the meeting was to interest the public in hospital affairs; partly, on the one hand, in order to teach the people the advantages to be derived from scientific treatment; and on the other, the responsibility of communities to establish and maintain hospitals of accredited standing. The earnest and impressive manner employed in this publicity campaign ought to carry conviction to the public that hospitals are indispensable in the scheme of community life, and since they have functions of vital importance, the community must require that degree of efficiency that has been deemed reasonable by the experts who have been concentrating on these problems.

The standardization of hospitals by the American College of Surgeons has been applied to all hospitals of this country of 50 beds and over, and the study will be carried on until it has covered even the smaller and the private hospitals.

Now that the surveys have been largely completed, a follow-up system will be inaugurated for the purpose of ascertaining adherence to standards.

Taken as a whole, the spirit shown by the speakers was instructive in dealing with the strictly professional work and stimulating in dealing with hospital problems. There was no petty faultfinding,—rather the spirit of a noble purpose to make surgery and our institutions of the greatest possible service to humanity.

THE CADUCEUS AND THE GREEN CROSS.

Now that the time has come when plumbers, chiropodists, and prohibition agents are displaying the Green Cross on their automobiles with the obvious purpose of receiving consideration and protection at the hands of the police, it seems fitting for us to consider what steps may be taken to clear the situation.

Many regular practitioners, believing the Green Cross to be a liability rather than an asset, have discarded it altogether. Failing any other means of respectable identification, we should advise that such a procedure be made universal. Another solution, however, appears to be quite feasible.

In reply to a letter from this office to the Superintendent of Police of Boston, Michael H. Crowley, he replies in part: "Any campaign that might be started by the members of the American Medical Association would not in the least interfere with the Police Department. The only thing that might be mentioned at this time is that the traffic rules and regulations issued by the Board of Street Commissioners of the City of Boston would have to be changed if any other insignia than the Green Cross were to be used on cars operated by physicians." The regulation referred to is in Article IV, Section 1, of the Traffic Rules, and reads: . . . "No vehicle shall stand with its left side to the curb. This rule shall not apply to a vehicle of a physician or clergyman while making a professional call . . . *provided*, that said vehicle . . . bear the distinguishing mark of a Green Cross on a white background." We know that a few years ago the Green Cross meant even more than that, and we believe that now, if the physicians carry a *really distinguishing mark*, the police officers are ready to give it every possible respect and consideration.

Mr. Frank A. Goodwin, Registrar of Motor Vehicles in Massachusetts, in reply to a similar letter, writes:

"The question of having proper insignia on automobiles belonging to doctors has created considerable discussion in the past. Of course, anyone can use the Green Cross, whether he is a doctor or not, and it would seem to me that the only emblem worth while would be one that is copyrighted. Then only those who were permitted by the proper authorities to display the insignia could do so.

"Very truly yours,

"(Signed) FRANK A. GOODWIN, *Registrar.*"

Having behind us the full coöperation of the city and state authorities, we urge the adoption of the official American Medical Association Caduceus as automobile insignia by the members of the Massachusetts Medical Society. The Green Cross has disappeared from the streets

of Worcester and Fall River, where the Caduceus is in general use by physicians.

It is true that there are, as yet, no police regulations in regard to the Caduceus, but we are informed that steps are being taken to make such an emblem officially recognized.

Let us have uniform, copyrighted, automobile insignia throughout the State—*or none!*

Act at once by forwarding the following coupon to The Mail Order Department, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

COUPON FORM.

Please forward to me one official American Medical Association automobile emblem plate.

Enclosed is my check for $1.50.

(Payable to A. M. A.)

Name .....

Address .....

Massachusetts District Society .....

VACCINATION AND SMALLPOX.

ALTHOUGH students of statistics have made many adverse interpretations of recorded facts relating to antivariolar vaccination, the antivaccinationists will find little comfort in the recent report of smallpox conditions in the Philippines as presented by the *Journal of the American Medical Association, No.* 80, Vol. 19, Physicians should preserve the statements therein published for use in connection with other records when called upon to discuss smallpox and its prevention. The history of vaccination in the Philippines has been the basis of many of the arguments used by the objectors to vaccination.

The important features of Padua's report are first, that effective vaccination prevents the incidence of smallpox to a large degree, and second, that antivariolar virus is liable to rapid deterioration in warm climates. The inefficacy of vaccination in the Philippines in the past has seemed to have been due to poor technic or climatic conditions. These adverse conditions do not in any way provide a reasonable objection to vaccination. The objectors to vaccination at the present time are not to be found among well educated and well trained health officers and physicians.

ANOTHER CURE FOR TUBERCULOSIS.

DR. WILLIAM P. NOLAN has discovered a cure for tuberculosis, according to statements made in the daily papers. It is reported that the treatment consists of the inhalation of pure carbon in amorphous form and calcium in the forms of carbonate, phosphate, chloride and lactate. It is reported that Dr. Nolan is Chief of the Pennsylvania State Tuberculosis Clinic of the Westmoreland County Hospital. His claims apparently rest on the treatment given to seventy-two patients.

As a matter of course everybody would welcome the demonstration of a curative treatment, but history tends to show that over-enthusiasm has repeatedly led to false hopes and extravagant claims. If the claims made by Dr. Nolan are not substantiated we shall see once more the sad plight of disappointed sufferers. We wish that publicity of experimental medicine could be eliminated from the lay press and only demonstrated facts published.

An eminent specialist in Boston has made the following sane comment on the situation: "We can only await with interest the results of further experiments and investigations in this respect, but I do feel that it is of the utmost importance, however, to urge doctors to sit tight and to urge the public not to get stampeded by such statements as this."

SUBSCRIPTIONS TO "THE HISTORY OF THE MASSACHUSETTS MEDICAL SOCIETY," BY WALTER L. BURRAGE, M.D.

Dr. E. H. Bigelow, ex-president of the Middlesex South District Medical Society, before retiring from office, secured the appointment of a committee to canvass the District for subscriptions to this volume.

He reports that the members are responding very generally. For example, four municipalities furnished subscriptions in excess of one hundred per cent. of the members of the District Society. The places are Framingham, Marlboro, Ashland and Hopkinton.

Dr. Bigelow has offered a small prize to the solicitor who will secure the largest number of subscribers. He is especially desirous of getting a larger percentage of subscribers than will be secured in Suffolk District.

Miscellany.

MASSACHUSETTS ASSOCIATION OF ASSISTANT PHYSICIANS.

THE sixtieth meeting of the Massachusetts Association of Assistant Physicians was held at the Northampton State Hospital, Wednesday, May 9, 1923, 47 members and ladies being the guests of the Superintendent, Dr. J. A. Houston.

During the morning groups of members were given the opportunity of visiting the various departments of the hospital, and this was followed by a most excellent dinner at 1.30 p.m. The meeting was called to order at 2.30 p.m. by the president, Dr. Arthur E. Patrell.

A paper entitled, "The Care of Defective Delinquents," by Dr. Arthur Momford, First Assistant Physician, Bridgewater State Hospital, opened the program. The care and training of these boys has been retarded by the commitment of psychotic cases, which more discriminating diagnoses would have placed in their proper sphere. Occupation has been the keynote and the boys have been put through military drill, setting up exercises and various industrial activities. Conduct is checked up by a merit system, which punishes by withdrawal from baseball or movies and stopping of tobacco ration, seclusion being for unapproachable cases only. Class grading on merit system provides means of better classification and promotion to improved desirable groups. Close contact with courts informs judges of progress of the boys and incidentally suggests the type of boy which needs their care. Discussion by Drs. Raymond, Dayton and Noble.

Dr. M. B. Root, Worcester State Hospital, then presented a paper on "Sex Trends in Mental Diseases." He reviewed the psychoanalytic conception of the rule of sexual conflicts in the production of mental symptoms, and presented case histories which tended to bring into relief certain definite struggles of the ego with perversions. While admitting that possibly only individuals with inferior equipment were overwhelmed by their conflicts Dr. Root feels that many psychoses and neuroses are explainable as the suffering and the tortured and the desperate ego in its struggle with individual sex desires, which somehow the organism has acquired and are incompatible with the integrity and happiness of the ego.

Dr. J. A. Houston closed the program with a discussion of "Changes in Psychiatry," the observations based on his 41 years' experience. He brought out the great change in medicinal treatment. In the early days supervisors carried the bottle of bromides which they issued on order, patients were occasionally rendered comatose and had to be revived by emergency measures, combinations of sedatives were given daily and everyone was on the lookout for even a stronger soporific. No sedatives have been given for many years at Northampton, with more successful treatment of disturbed patients. The cell-blocks, iron bars, and furniture bolted to the floor have given place to light, airy wards, closely simulating home conditions. Psychiatry, generally speaking, has passed from the mere almshouse care of the insane to the point that the institution is reaching out into the community and, by means of its clinics, is actually searching for cases, so that mental diseases may have the benefit of early recognition and treatment. Dr. Houston considers that while the scientific study of mental diseases is important, it should never take the place of close personal interest in patients. The humanitarian viewpoint should be ever in the foreground and nothing should ever replace simple friendliness with those under your care.

NEIL A. DAYTON, M.D., *Secretary.*
Wrentham State School.

CHILDREN'S HOSPITAL, CLINICAL STAFF MEETING.

The last clinical staff meeting of the year was held at the Children's Hospital on May 11.

The first case, presented by Dr. Richard M. Smith, was that of a child of 4½ years, with a history of an acute upper respiratory infection with anorexia and listlessness, starting a month before admission. The temperature ranged from 103-104° F. There was a slightly productive cough with suspicious signs at the right apex, and a diffuse bronchitis. X-ray, urine and Von Pirquet were negative. The white count was 6,800, the pulse 110-130, with respirations of 24 to 26. The blood culture was negative but the Widal was strongly positive. The spleen was not palpable and there were no sore spots. A diagnosis of typhoid fever was made.

Dr. Smith further demonstrated two cases showing rheumatic nodules. These often occur in the rheumatic group of infections in showers lasting from a few days to a few weeks. The site of occurrence is in the deep fascia and tendons. They are non-tender.

Dr. Lynn R. Hoag presented two cases of rickets associated with tetany; one was an infant of 13 months, breast-fed, with active rickets and tetany with typical laryngismus stridulus and Chvostek sign and electrical reactions; that is, the cathodal opening contact was 25 milliamperes, the normal being 5 m.a. The blood calcium in this case was 5.9 mgm. per 100 c.c. of blood, definitely below normal, but the phosphorus was 5.7 mgm. in the whole blood and 8.1 mgm. in the serum, well above normal. The older brother, 2 years and 3 months of age, showed a more chronic form of rickets and a milder degree of tetany. His blood calcium was 6.7 mgm. and his blood phosphorus 4.8 in the whole blood and 6.3 in the serum. These two cases represent the type with lowered calcium and normal or increased phosphorus. These figures are sometimes reversed, but there is always an altered balance between the two.

A case previously shown at an earlier clinic was again demonstrated by Dr. Robert Osgood. This case had shown a lateral kyphosis of the spine with respiratory difficulty which was relieved by hyperextension. Positive Wassermanns had been obtained. A spinal cord block supervened. Laminectomy was performed by Dr. Harvey Cushing and at operation the cord was found to be bent with a mass of fatty tissue pressing on it. Distended vertebral capsules containing pus were pressing on the cord laterally. No pus was obtained from the supposed

abscess. The diagnosis is probably tuberculosis and the child is improving.

Dr. Osgood then showed a case of acute osteomyelitis of the left tibia in which holes bored in the tibia produced no pus, but pus was obtained from the diaphysis. This case illustrates the point that infections always start near the epiphyseal line. Three cases were shown demonstrating the operation for obstetrical paralysis and the splints used in putting up these cases. Dr. Stone remarked on the danger of using these right-angled splints on infants, as the epiphyses may be misplaced by them.

Dr. George D. Cutler demonstrated a case of a masked bilateral cephalhematoma and a case of an intracranial cyst, showing by x-ray the parietal bone thinned and bulging. An osteoplastic flap was made and the dura and pia arachnoid found to be normal. After operation headache and strabismus developed and the discs began to blur. Fifty c.c. of yellowish fluid was withdrawn through the old scar, with relief of symptoms.

A neuroblastoma of the liver, following an abdominal injury, and invading the lungs and kidneys, was shown by Dr. Wilson.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY.

The annual meeting and dinner of the Essex South District Medical Society was held at Hotel Savoy, Gloucester, May 10, 1923, at 6.30 P. M., with an attendance of sixty. It was voted to adopt the Caduceus as an emblem for display upon automobiles of members and a committee was appointed to apprise mayors and police chiefs in the several cities and towns in the district of that fact. The following list of officers was elected for the ensuing year:

President, Dr. S. W. Mooring, Gloucester; Vice President, Dr. Loring Grimes, Swampscott; Secretary, Dr. R. E. Stone, Beverly; Treasurer, Dr. Andrew Nichols, III., Danvers; Librarian, Dr. C. M. Cobb, Lynn; Commissioner of Trials, Dr. J. E. Simpson, Salem.

Council, Dr. W. T. Hopkins, Lynn; Dr. J. W. Trask, Lynn; Dr. J. F. Donaldson, Salem; Dr. W. G. Phippen, Salem; Dr. A. N. Sargent, Salem; Dr. H. K. Foster, Peabody; Dr. J. F. Jordan, Peabody; Dr. G. M. Kline, Beverly; Dr. P. P. Johnson, Beverly; Dr. R. E. Stone, Beverly.

Nominating Councillor, Dr. F. W. Baldwin, Danvers; Alternate Nominating Councillor, Dr. P. P. Johnson, Beverly.

Censors, Dr. J. F. Donaldson (supervisor), Salem; Dr. C. L. Curtis, Salem; Dr. R. E. Foss, Peabody; Dr. A. T. Hawes, Lynn; Dr. H. P. Bennett, Swampscott.

Executive Committee, Dr. C. M. Wilson, Salem; Dr. A. S. Torrey, Gloucester; Dr. G. H. Kirkpatrick, Lynn; Dr. Albert Parkhurst, Beverly.

A very pleasant feature of the meeting was the presentation of a purse of gold to the retiring treasurer, Dr. George Z. Goodell, who has faithfully served the society in that capacity for thirty-two years. Following the dinner an address was given by Dr. Walter E. Fernald of Waverley upon "The Bright Child and the Dull Child." At the close of the discussion a glowing tribute was paid to Dr. Fernald for his work in this field by Dr. George M. Kline, State Commissioner of Mental Diseases.

Adjourned 10 P. M.

WM. T. HOPKINS, *Reporter.*

MEDICAL NOTES FROM THE NUTRITION INSTITUTE.

The Nutrition Institute held at Richmond, Virginia, from April 9 to 21, was organized with especial effectiveness to meet the needs of the entire State. It had the backing of the State Board of Health, the State Board of Education, the Virginia Department of Public Welfare, the Richmond City School Board and the Academy of Medicine, besides thirty-nine other state and city organizations.

The working force organized itself into the Virginia Co-operative Child Welfare Committee under the leadership of Dr. Charles C. Hudson of the Richmond Board of Health. Dr. C. C. Levy of the Department of Public Welfare was active in insuring the success of the undertaking. Of the 120 members of the Institute a number were physicians, among whom were Dr. Lawrence T. Royster of Norfolk and Dr. Lawrence Hadden of Portsmouth.

Dr. William R. P. Emerson gave addresses before the Richmond Academy of Medicine, a mass meeting of school teachers and principals, and the Kiwanis, Lions, Advertising and Richmond First Clubs. He also conducted a special course of demonstration lectures for a group of sixty mothers concerned with the welfare of their own children and with the social organization of Richmond as well. Their interest was so great that two additional days were required to examine children from the homes represented in this group.

The Field Secretary of Nutrition Clinics, Miss Mabel Skilton, spoke before the Public Teachers' Association and Clubs, the Parent-Teachers' Association, the Highland Club, and gave addresses at Petersburg, Norfolk and Springfield. A special meeting was held for the colored people of the city and one of the six demonstration classes was held in a colored school.

Students were present from Charlottesville, Staunton, Norfolk, Portsmouth and other cities. Conferences were arranged with the State Senatorial Committee, the Superintendent of

Schools, and a group concerned with rural problems.

THE MEETING OF THE COUNCIL OF THE GUILD OF ST. LUKE.

A meeting of the Council of the Guild of St. Luke was held on May 18, 1923. Arrangements were made for the June meeting, to be held at St. Elizabeth's Hospital, Brighton. An interesting program has been planned, consisting of a symposium on the life of Pasteur and clinics in the various departments of the hospital.

Dr. Robert M. Merrick will speak on "Pasteur the Man," and Dr. Francis P. McCarthy, on "Pasteur the Scientist."

Nominations were made for new officers to be voted on at the coming meeting. Date to be announced later.

THE JAMES MARSH JACKSON LEAGUE, INC.

In 1916 an unincorporated organization called the Tide Over League opened headquarters at 296 Boylston Street and undertook to carry on and develop certain work which Miss Mary Irving Husted had been doing with the assistance and coöperation of Dr. James Marsh Jackson and Dr. E. G. Brackett. The work developed with such rapidity that in 1919 it was thought advisable to incorporate under the name Tide Over League, Inc. Miss Husted, who was director and general manager of the League from 1916 to 1923, has now resigned as such, and under a contract made with her in 1916, the League has ceased to use the name Tide Over, and will hereafter be called the *James Marsh Jackson League, Inc.* Under this name it will maintain the same standards and ideals as heretofore.

The work is two-fold:

1. With convalescents who, when they leave the hospital, are not physically able to take up at once their former occupation, and are taught to do weaving, basketry, and other light work in the Workshop or their homes. This form of occupational therapy is a great aid in building up their physical and mental strength. Many, who could not otherwise give sufficient time for a proper convalescence, are being paid for the work they do.

2. A school of applied arts is maintained, where thorough individual instruction is given to students in the various handicrafts.

The League also cares for the longer type of convalescent—heart, orthopedic, paralysis, or cases of nervous exhaustion—who need both money and occupation. The benefit to this group is immediate, as the patients' work is not sold on commission. The League furnishes the materials, pays cash for time, and sells, at its own risk, the articles made, both through the Workshop and the Bureau of Occupational Therapy.

There are three types of patients: those who pay for the privilege of learning the work, either at home or at the Workshop, for its therapeutic value; those who pay in part, and those who are paid for their work either at home or at the Workshop.

This work will be continued and developed; and the League will gladly coöperate with doctors or social service departments of the hospitals.

E. G. Brackett, M.D.,
Edward Wyllys Taylor, M.D.,
Harry C. Low, M.D.,
T. S. Eastman, M.D.,
Robert B. Osgood, M.D.,
Kendall Emerson, M.D.

News Items.

Dr. McKeen to Move.—Dr. S. F. McKeen will move from his residence in Allston to 96 Dean Road, Brookline, about June 1.

A New Maternity Hospital.—An addition to the Lynn Hospital which will create a maternity hospital of 50 beds will be provided if the plans that have been made to secure $250,000 are realized. The slogan adopted for the drive is "A cot for every tot."

Massachusetts General Hospital.—A clinical meeting of the Out-Patient Department staff was held in the Lower Out-Patient Amphitheater Wednesday, May 23. Some interesting cases of bone tumors were shown by Dr. George W. Holmes and Dr. H. F. Hartwell.

New York Academy of Medicine.—At the meeting of May 17, 1923, Dr. Elliott P. Joslin delivered an address under the title of "Diabetic Treatment with and without Insulin as Carried Out at the New England Deaconess Hospital." Dr. Joslin presented patients in order to illustrate the methods employed.

Week's Death Rate in Boston.—During the week ending May 12 the number of deaths reported was 230, against 205 last year, with a rate of 15.57. There were 21 deaths under one year of age against 25 last year. The number of cases of principal reportable diseases were: Diphtheria, 56; scarlet fever, 94; measles, 78; whooping cough, 58; typhoid fever, 2; tuberculosis, 38. Included in the above, were the following cases of non-residents: Diphtheria, 4; scarlet fever, 19; measles, 3; whooping cough, 2; tuberculosis, 6. Total deaths from these diseases were: Diphtheria, 5; measles, 2; whooping cough, 2; tuberculosis, 22. Included in the above were the following cases of non-residents: Diphtheria, 3; tuberculosis, 3.

NATIONAL HEALTH COUNCIL.—The following changes with regard to the Washington Office are announced: The bi-weekly statements on National Health Legislation have been discontinued until after the present recess of Congress. Mr. James A. Tobey, formerly Washington Representative, has been appointed Administrative Secretary, with headquarters at New York, after June 1, 1923. Through an arrangement with the American Child Health Association, Miss Cornelia Lyne of that organization will temporarily serve as Washington Representative of the Council. Miss Lyne's address is 532 Seventeenth Street N. W., Washington, D. C. All mail for Mr. Tobey should hereafter be addressed as follows: National Health Council, 370 Seventh Avenue, New York City.

SUIT AGAINST A PHYSICIAN.—In the Superior Court, Bristol County, New Bedford, May 7, 8, 9, 10, 1923, the suit of Peter Kos against Norbert P. Brault, M. D., was heard. This suit was brought against Dr. Brault for negligence in treating an infant child of the plaintiff, and for conscious suffering in the death of the infant. Suit was for $20,000. At time of birth the right femur was broken in delivery. X-ray photographs were a part of the exhibit, and testimony of a Taunton physician as to pelvic measurements of Mrs. Kos, made at the time of a previous delivery, was submitted. Most of the testimony of the plaintiff's witnesses was through an interpreter in the Polish language. Dr. Brault testified in his own behalf, and his wife, a nurse, who assisted at the confinement, also testified. The jury brought in a verdict for the defendant.

BEVERLY HOSPITAL.—The Beverly Hospital celebrated National Hospital Day, Saturday, May 12, by holding a clinic in the morning, consisting of gall-bladder operation, suturing of fractured patella, and a most interesting series of bone cases were shown, including osteomyelitis, rickets, Paget's disease, carcinoma of the skull, secondary to an untreated ulcerated cancer of the breast, and osteosarcoma. Following the clinic lunch was served. Doctors were present from Beverly, Danvers, Ipswich, Manchester, Lynn and Hamilton. In the afternoon the hospital was open to the public for inspection and tea was served by the Ladies' Aid Society. In the evening graduation of nurses took place. The following nurses received diplomas: Misses Eleanor Richardson Gowen, Mildred A. E. Torngren, Mary Lovett Pierce, Dorothy I. Diggdon. Mr. John L. Saltonstall, president of the Board of Directors, presided. The principal speaker of the evening was Hon. Robert Washburn, ex-Senator from Worcester, who spoke most interestingly. Mrs. A. L. Cochrane rendered several very pleasing vocal solos. Graduation exercises were followed by dancing.

Correspondence.

THE CADUCEUS.

Mr. Editor:

Is it advisable for physicians to adopt the caduceus, which has the approval of the American Medical Association, as an emblem for the doctor's car?

For a number of years past it has been customary in this vicinity to display the green cross on a white field, and before a change is made it would be well to be certain that this cross is unsatisfactory.

The caduceus is a winged rod entwined by two serpents, and is the badge of Mercury, the god of commerce and, incidentally, of thieves.

If a change is desired, why not adopt the staff of the god of Medicine, Aesculapius, which is not winged, and is entwined by but one serpent?

HAROLD BOWDITCH, M.D.

CONDITIONS IN RUSSIA.

May 10, 1923.

Mr. Editor:

I am enclosing herewith copy of a letter from Dr. Eversole to Dr. Haven Emerson, and also copy of a letter from Dr. Thayer to Dr. Herrick regarding conditions in Russia. There is general testimony that in the turmoil and disaster of the past six years in that great country the heroes of the situation have been the doctors. They have fought disease and distress with the utmost faithfulness. Whatever question we may have about other conditions in Russia, there is no question about the dire privations among our medical brethren. If it is possible, I wish that you would publish all, or at least significant parts, of the accompanying letters in order that readers of the JOURNAL may know the opportunities for being helpful in the various ways that are suggested.

A letter just received informs me that the Quakers have an agreement with the Russian Federal Department of Health by which official health bulletins will carry a notice to the effect that medical literature in English is available to medical schools, hospital staffs and individual physicians who will apply for it. The Quakers promise to see that these requests are complied with and that the literature is properly distributed.

The form appended to the letter from Dr. Eversole to Dr. Emerson indicates the mode by which the contributions may be sent.

W. B. CANNON.

(Reprint of letter from Dr. H. O. Eversole, of the Commission on Russian Relief of the National Information Bureau, Inc., to Dr. Haven Emerson, of American Medical Aid for Russia.)

March 19, 1923.

Dr. Haven Emerson,
American Medical Aid for Russia,
103 Park Avenue, New York City.

My dear Dr. Emerson:

As public health adviser to the Russian Commission of the National Information Bureau, I had the opportunity of making a survey of health conditions in the larger cities, in normal country districts, and in the famine districts of Russia. You are conversant with the fact that Miss Bond and Miss Davis assisted me in this work, but I desire to emphasize the importance of their coöperation.

Our observations agree with the reports of the League of Nations Health Section as to typhus, recurrent fever, cholera, dysentery and smallpox. Great effort is being made to control epidemic diseases, but they are still to be found in all parts of the country to an extent that would tax the health resources of any country. Accurate medical statistics are not available, but the fact that in the past five years, according to the most moderate estimates of epidem-

iologists, there have been 25,000,000 cases of typhus alone, gives some idea of the extent of the problem. Malaria is widespread, especially among the peasant population, and is still on the increase. In December the Commissariat of Health reports 8,000,000 cases registered. No statistician dares even estimate the inroads of tuberculosis upon an exhausted population in a chronic state of undernutrition.

One of the most serious problems which confronts the medical profession is the care of millions of children whose health has been damaged by adverse social and economic conditions. Studies made among 25,000 school children in Kiev and 22,000 in Kharkov, both in the famine region, show 75 per cent. and 82 per cent. classified as tubercular on the basis of von Pirquet tests plus positive clinical findings in each case. A school dispensary in Petrograd reports that if marked anemia and malnutrition are included, 100 per cent. of the 27,000 children examined in 1922 presented symptoms requiring treatment.

Hospitals, which have been taxed to the utmost to meet the epidemic situation, are now running with greatly reduced efficiency owing to lack of necessary equipment and supplies. Surgical instruments are worn beyond the possibility of repair. The American Relief Administration and other foreign relief organizations have sent great quantities of medical supplies, but Russia is so large and so impoverished after the many years of isolation and disease that we found medicines only in small quantities or entirely lacking in all the districts we visited in Russia. In many of the so-called normal areas, which have never been touched by foreign relief, the lack of essential supplies is even more acute than in the famine area. Dispensaries, while still running, are hampered by the lack of even the simplest drugs. For example, one district in the Samara Government, reporting 4500 cases of malaria, had not one grain of quinine.

In spite of these material handicaps, medical work in Russia is not an incoherent effort of individual physicians. The central Commissariat of Health in Moscow is a real organization, with local departments in every government functioning on parallel lines. It has a carefully thought out program covering every phase of preventive and curative work, formulated and directed by a scientific council, including physicians of international reputation. Constructive work has been hampered by the emergencies of famine and epidemic, but there is no reason to believe that it will not be further developed as soon as economic conditions permit.

Russian doctors and nurses as a result of their self-sacrificing efforts to maintain a high standard of medical work, have reached the point of exhaustion. It is certain that at least 75 per cent. of these men and women are existing on incomes inadequate for even the bare necessities of food and clothing. Great numbers of doctors and nurses have died in fighting epidemics, others have contracted tuberculosis, and those who remain are so weakened by years of privation and overwork that they have slight resistance to disease. All achievement is being paid for in terms of undermined health and death among the medical personnel, but Russian doctors everywhere, while admitting their desperate economic condition, made only one appeal for themselves—medical literature from the outside world.

In my opinion the point of attack in the present health situation of Russia is to preserve the medical personnel and to supply their essential professional needs. There is great need for food and clothing to protect the health of the individual physician and nurse; for instruments, drugs, medical supplies and literature to make their work effective. I trust that the National Campaign of Physicians and Surgeons in behalf of medical aid for Russia will bring this situation so forcibly to the attention of the American public that immediate and generous aid will be given.

Yours sincerely,

H. O. EVERSOLE.

American Medical Aid for Russia.
(Medical Division, American Friends Service Committee),
103 Park Avenue, New York City
Amos J. Peaslee, Treasurer.

Enclosed find my contribution of ..... for medical relief in Russia.

I am sending to the American Friends Service Committee Storeroom, 1521 Cherry Street, Philadelphia, Pa., the following articles:

Clothing .....

Medical Literature .....

Instruments and Supplies .....

Name .....

Street .....

City .....

State .....

1208 Eutaw Place, Baltimore, Md.,
April 28, 1923.

Dr. James B. Herrick,
American Association of Physicians,
Atlantic City, N. J.,

Dear Dr. Herrick:

An earnest effort is being made by a committee—"American Medical Aid for Russia"—to collect money, clothing, instruments, books and journals for our medical colleagues in Russia.

The condition of these men is deplorable. Removed happily by the nature of their profession from the political disturbances, they have suffered doubly from the troubles of the last six years in that, while the demands for their assistance have multiplied immensely, they have been almost deprived of medical supplies, indeed, even of the necessities of life. They are not only actually in need of food and clothing, but terribly in need of medical and surgical instruments, and of books and journals.

If everyone of us would make his personal effort to help to send such money and clothes as he can, to send files of JOURNALS which he does not use himself, as well as such medical books and JOURNALS as he can spare, it would be an immense help.

It's not a charity; it's a duty.

Won't you bring the matter before the Association?

Believe me.

Yours sincerely,

(Signed) W. S. THAYER.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.

May 10, 1923.

Mr. Editor:

An editorial in the issue of April 19, 1923, page 609, suggests that the various societies of specialists follow the example of the American College of Surgeons by establishing a minimum standard for qualification to practice in each individual specialty.

This has already been done by the ophthalmologists, who organized the American Board for Ophthalmic Examinations before the American College of Surgeons had begun their work of examining surgeons for the College.

This Board consists of nine members, three from each of the leading ophthalmic organizations—the American Ophthalmological Society, the American

Academy of Ophthalmology and Oto-Laryngology, and the Section on Ophthalmology of the American Medical Association—chosen in the same manner as the presiding officers of these societies. So far, about three hundred ophthalmologists have been certified by this Board. At the present time, no ophthalmologist is accepted for membership in the American Ophthalmological Society, the American Academy of Ophthalmology and Oto-Laryngology, the New England Ophthalmological Society, and a number of other societies, unless he has received the certificate of the American Board for Ophthalmic Examinations. One of the aims of the Board has been to improve the graduate teaching of ophthalmology in this country; and a good deal has already been accomplished in this direction.

WALTER B. LANCASTER.
520 Commonwealth Avenue, Boston.

A CORRECTION.

May 16, 1923.

Mr. Editor:

The second paragraph of the summary of the article entitled "Notes upon the Children of Women with Positive Wassermann Tests," on page 695 of the May 3, 1923, issue of the JOURNAL, should be corrected to read:

"Syphilis is an appreciable factor in the causation of fetal deaths directly or indirectly producing from 30 to 40 per cent. *of such deaths in the history of women who have definitely positive Wassermann reactions.*"

DAVID L. BELDING.

NOTICES.

The Massachusetts Medical Society.

ONE HUNDRED AND FORTY-SECOND ANNIVERSARY TUESDAY, JUNE 12, AND WEDNESDAY, JUNE 13, 1923,

AT THE MAPLEWOOD HOTEL, PITTSFIELD.

GENERAL INFORMATION.

A Bureau of Information will be maintained by the Committee of Arrangements during Tuesday and Wednesday at the office of the Maplewood Hotel. A folder containing full information concerning accommodations, entertainments, and amusements will be distributed there.

All Fellows are requested to register and procure their badges and dinner tickets as soon as they arrive.

A cordial invitation is given to the wives and families of Fellows to attend the convention. The local Committee of Arrangements has made plans, through their ladies' committee, to entertain the families during the two days of the meeting. Fellows will please indicate on the post card previously sent the number of ladies who will accompany them and also supply the information to the Bureau of Information on arriving.

TUESDAY MORNING, JUNE 12, 1923.

Tuesday morning will be given up to recreation. There will be golf and tennis at the country clubs and automobile sightseeing. Please apply at the Bureau of Information. Those wishing to enter golf or tennis tournament will please notify Dr. M. H. Walker, Jr., 18 Bank Row, Pittsfield, in advance, stating home club handicap.

TUESDAY AFTERNOON, JUNE 12, 1923.

MEETING OF THE SECTION OF MEDICINE.

MAPLEWOOD HOTEL, AT 2 O'CLOCK.

Officers of the Section of Medicine.

Brace W. Paddock, Pittsfield, Chairman.
Francis M. Rackemann, Boston, Secretary.

1. Psychotherapy.
   By Dr. Austen F. Riggs, Stockbridge.
   Discussion opened by Dr. Stanley Cobb, Boston.
2. The Value of Examination of Renal Efficiency for the Diagnosis of Kidney Disease.
   By Dr. Warfield T. Longcope, Baltimore, Md.
   Discussion by Dr. James P. O'Hare, Jamaica Plain (Boston), and W. Richard Ohler, Jamaica Plain (Boston).
3. Focal Infection in Relation to Systemic Disease.
   By Dr. W. Gilman Thompson, New York City.
   Discussion opened by Dr. Everett A. Bates, Springfield.
4. Syphilis with a Negative Wassermann Reaction.
   By Dr. C. Morton Smith, Boston.
   Discussion by Dr. Winford O. Wilder, Springfield, and Dr. Nathan Finkelstein, Pittsfield.
5. Diabetes, Insulin, and the General Practitioner.
   By Dr. Elliott P. Joslin, Boston.
   Discussion by Dr. Augustus K. Boom, Adams, and Dr. Reginald Fitz, Boston.

MEETING OF THE SECTION OF SURGERY.

MAPLEWOOD HOTEL, AT 2 O'CLOCK.

Officers of the Section of Surgery.

John B. Thomes, Pittsfield, Chairman.
George A. Leland, Jr., Boston, Secretary.

1. Acute Perforations of the Stomach and Duodenum, with Particular Reference to End-Results.
   By Dr. Charles L. Gibson, New York City.
   Discussion by Dr. Homer Gage, Worcester, and Dr. John M. Birnie, Springfield.
2. How the Symptomatology is but the Outward Manifestation of the Pathology in Ectopic Pregnancy.
   By Dr. John Osborn Polak, Brooklyn, N. Y.
   Discussion by Dr. Ernest L. Hunt, Worcester, and Dr. Stephen Rushmore, Boston.

MEETING OF THE SECTION OF HOSPITAL ADMINISTRATION.

MAPLEWOOD HOTEL, AT 2 O'CLOCK.

Officers of the Section of Hospital Administration.

John J. Dowling, Boston, Chairman.
Edmund W. Wilson, Boston, Secretary.

1. Functions of a Municipal Hospital.
   By Dr. Francis W. Peabody, Boston.
2. Municipal Hospitals from a Trustee's Viewpoint.
   By Dr. Henry S. Rowen, Brighton (Boston).
3. Some Newer Developments in Hospitals.
   By Mr. Charles A. Coolidge, Architect, Boston.

ANNUAL MEETING OF THE SUPERVISING CENSORS.

MAPLEWOOD HOTEL, AT 4 O'CLOCK.

ANNUAL MEETING OF THE COUNCIL.

MAPLEWOOD HOTEL, AT 4.30 O'CLOCK.

Following the meeting of the Council tea will be served to the Fellows, their families, and guests at

the hotel, the funds being derived in part from the income of the bequest of the late Benjamin Eddy Cotting. Tea will be served also at the Country Club, to the ladies, at 4 o'clock.

TUESDAY EVENING, JUNE 12, 1923.

THE SHATTUCK LECTURE.

MAPLEWOOD HOTEL, AT 8 O'CLOCK.

Some Peripheral Nerve Problems.
By Dr. Dean Lewis, Chicago, Ill.

After the lecture there will be a reception to the President, a buffet supper, and dancing. All the Fellows and their families are invited.

WEDNESDAY MORNING, JUNE 13, 1923.

MEETING OF THE SECTION OF TUBERCULOSIS.

MAPLEWOOD HOTEL, AT 9.30 O'CLOCK.

Officers of the Section of Tuberculosis.

Edward O. Otis, Boston, Chairman.
Sumner H. Remick, Reading, Secretary.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

1. The General Management.
   By Colonel George E. Bushnell, U. S. A. (Retired), formerly in charge of the U. S. A. Sanatorium, Fort Bayard, New Mexico.
2. The Sanatorium Treatment.
   By Dr. Ernest B. Emerson, Superintendent and Physician-in-Chief, Rutland State Sanatorium.
3. The Home Treatment.
   By Dr. Edgar T. Shields, Field Secretary, National Tuberculosis Association, New York.
4. The Symptomatic Treatment.
   By Dr. Edward O. Otis, Boston.

General discussion opened by Dr. Francis E. O'Brien, Haydenville, Superintendent Hampshire County Sanatorium, and by Dr. Henry Colt, Pittsfield.

MEETING OF THE SECTION OF PEDIATRICS.

MAPLEWOOD HOTEL, AT 9.30 O'CLOCK.

Officers of the Section of Pediatrics.

Alexander C. Eastman, Springfield, Chairman.
J. Herbert Young, Newton, Secretary.

1. Heart Murmurs in Infancy and Childhood.
   By Dr. John Lovett Morse, Boston.
2. The Treatment of Whooping-Cough in Private Practice.
   By Dr. William W. McKibben, Worcester.
3. Factors Governing Gain in Weight in the First Year.
   By Dr. Fred H. Allen, Holyoke, and Dr. Edward P. Bagg, Jr., Holyoke.
4. Intracranial Hemorrhage in the Newborn.
   By Dr. Richard S. Eustis, Boston.

MEETING OF THE SECTION OF OBSTETRICS AND GYNECOLOGY.

MAPLEWOOD HOTEL, AT 9.30 O'CLOCK.

Officers of the Section of Obstetrics and Gynecology.

Charles E. Mongan, Somerville, Chairman.
Frederick C. Irving, Boston, Secretary.

1. The Convulsive Toxemia of Pregnancy and Its Treatment.
   By Dr. Ross McPherson, New York City.
   Discussion by Dr. D. M. Ryan, Ware, Dr. Clifford S. Chapin, Great Barrington, and Dr. Edward B. Kellogg, Boston.
2. Round Table Conference.
   How Can the Section of Obstetrics and Gynecology Be Made Most Valuable to the General Practitioner?
   Discussion opened by Dr. Alfred H. Quessy, Fitchburg, Dr. Burton E. Hamilton, West Roxbury (Boston), and Dr. Thomas R. Goethals, Brookline.
   General Discussion.

WEDNESDAY NOON, JUNE 13, 1923.

ANNUAL MEETING OF THE SOCIETY.

MAPLEWOOD HOTEL, AT 12 O'CLOCK.

Business of the Annual Meeting.

WEDNESDAY AFTERNOON, JUNE 13, 1923

THE ANNUAL DISCOURSE.

AT 1 O'CLOCK.

The Physical Examination of Apparently Healthy Individuals, Its Importance, Limitations, and Opportunities.
By Dr. Roger I. Lee, Cambridge.

THE ANNUAL DINNER.

MAPLEWOOD HOTEL, AT 2 O'CLOCK.

Tickets for the dinner will be issued at the Bureau of Information, without cost, to all Fellows who have paid their dues.

Fellows desiring to sit together in groups will please send their names to the local chairman of the Committee of Arrangements, Dr. A. P. Merrill, and the proper reservations will be made.

It is necessary that the local chairman of the committee know in advance the approxmiate number of those who will attend the dinner, therefore a reply post card has been sent out. It is earnestly requested that each Fellow fill out and mail the card as soon as possible.

WEDNESDAY AFTERNOON LATE.

After the dinner there will be further opportunity to play golf and tennis or to do sightseeing in the Berkshires.

MEETINGS OF THE COUNCIL.

The Annual Meeting, Tuesday, June 12, 1923, at the Maplewood Hotel, Pittsfield. Other stated meetings in John Ware Hall, Boston Medical Library, on the first Wednesdays of October and February.

CENSORS' MEETINGS.

The Censors for the several districts will meet for the examination of applicants for fellowship on the first Thursdays of May and November.

The Censors for the Suffolk District will examine applicants residing in that district and also applicants who are non-residents of Massachusetts.

Applicants for fellowship should apply to the Secretary of the District Society of the district in which they reside (have a legal residence), at least one week before the date of a given examination, taking with them their degrees in medicine.

TREASURER'S NOTICE.

Assessments should be paid to District Treasurers,

or, in the case of non-residents, to the Treasurer.

Assessments were due January 1. For the convenience of members who have been unable to pay, assessments will be received for the Treasurer at the Annual Meeting.

SECRETARY'S NOTICE.

All communications as to membership, especially changes of residence and address, should be sent to the Secretary, who keeps a constantly corrected official list of the Fellows and their addresses. District Secretaries and Treasurers should true their lists by the official lists of transfers and changes published in the JOURNAL.—Walter L. Burrage, Secretary.

THE JOURNAL.

The BOSTON MEDICAL AND SURGICAL JOURNAL, the official weekly organ of the Society, will be sent only to Fellows who have paid their assessments, and to such Honorary and Retired members as may apply for it. Address communications to the Managing Editor of the JOURNAL, Dr. W. P. Bowers, 126 Massachusetts Avenue, Boston 17.

PROGRAM OF PETER BENT BRIGHAM HOSPITAL REUNION.

MAY 24, 25, 26, 1923.

IN CELEBRATION OF THE TENTH ANNIVERSARY OF THE OPENING OF THE HOSPITAL FOR PATIENTS.

THURSDAY, MAY 24.

8.30-11—Surgical operations and ward visits by members of the staff. Detailed program to be found on Hospital bulletin boards.

IN AMPHITHEATRE.

11-11.15—The Pathology of Influenza. Channing Frothingham, Physician.

11.15-11.30—Title to be announced later.
Ernest W. Goodpasture, Director of the Singer Memorial Laboratory, Pittsburgh, former Resident Pathologist.

11.30-11.45—Studies on the Physiology of the Kidney. Joseph T. Wearn, University of Pennsylvania, former Medical House-Officer and Assistant Resident Physician.

11.45-12—Neuro-fibroma of the Spinal Cord. David W. Houston, Jr., of Troy, New York, former Surgical House-Officer.

12-12.15—Further Observations on Sugars in the Organism. Otto Folin and Hilding Berglund, presented by Hilding Berglund, Assistant Resident Physician.

12.15-12.30—Recent Developments in the Operation for Removal of the Tonsils. Clifford B. Walker, of Springfield, Mass., former Associate in Surgery.

12.30-12.45—The Anaphylactic Phase of Sympathetic Ophthalmia. Alan C. Woods, Instructor in Ophthalmology, Johns Hopkins University, Baltimore, former Medical House-Officer.

12.45-1—Four Additional Cases of Pearly Tumor. Percival Bailey, Associate in Surgery.

1-2.30—Luncheon at Peter Bent Brigham Hospital.

2.30-2.45—The Relation Between Ulcer and Cancer of the Stomach. David Cheever, Surgeon.

2.45-3—Oxygen Consumption in Tetany of Hyperpnoea. S. B. Grant, Assistant Resident Physician.

3-3.15—Title to be announced later.
Francis W. Peabody, Physician to Boston City Hospital, Consulting Physician, Peter Bent Brigham Hospital, and Professor of Medicine, Harvard Medical School, former Resident Physician and Physician.

3.15-3.30—Autotransplantation of Endometrial Tissue in the Rabbit. V. C. Jacobson, Professor of Pathology, Albany Medical College, Albany, New York, former Medical House-Officer, Pathological House-Officer and Resident Pathologist.

3.30-3.45—The Cerebral Ventricles in Epilepsy. Stanley Cobb, Asst. Professor of Neuropathology, Harvard Medical School, former Surgical House-Officer.

3.45-4—Encephalitis Lethargica as Seen at the Peter Bent Brigham Hospital. D. J. MacPherson, Associate in Medicine.

4-4.15—Title to be announced later.
Lawrence J. Rhea, Pathologist to the Montreal General Hospital, former Resident Pathologist.

4.15-4.30—Digitalis in Hearts with Slow Rate and Regular Rhythm. Henry A. Christian, Physician-in-Chief.

4.30-6—Tennis. Tea given by Nurses' Alumnæ Association. Music by First Year Student Nurses.

6.30—Dinner at the Peter Bent Brigham Hospital.

8.00—Entertainment by Nurses' Alumnæ Association and Resident Staff.

FRIDAY, MAY 25.

8.30-11—Surgical operations and ward visits by members of the staff. Detailed program to be found on Hospital bulletin boards.

IN AMPHITHEATRE.

11-11.15—Excretion of Organic Acids in Diabetes. Reginald Fitz, Physician.

11.15-11.30—Effects of Insulin and Adrenalin on the Respiratory Exchange of Normal and Diabetic Men. W. S. McCann, Associate Professor of Medicine, Johns Hopkins University, Professor of Medicine Elect, Rochester University, former Associate in Surgery.

11.30-11.45—Some Phases of Insulin Treatment in Diabetes. William P. Murphy, Assistant Resident Physician.

11.45-12—The Part Played by the Liver in the Regulation of the Erythrocyte Content of the Blood. Paul D. Lamson, Associate Professor of Pharmacology, Johns Hopkins University, former Assistant Resident Physician.

12-12.15—The Influence of the Adrenals on an Infection. W. J. Merle Scott, Arthur Tracy Scott Fellow.

12.15-12.30—The Results of Arthrodeses of the Sacro-iliac Joint in Cases of Relaxation and of Tuberculosis. M. N. Smith-Petersen, Instructor in Orthopedic Surgery, Harvard Medical School, former Surgical House-Officer.

12.30-12.45—Analysis of Methods for Studying the Length of Life of Red Cells. Raphael Isaacs, Voluntary Assistant in Medicine.

12.45-1—Title to be announced later.
Charles Bagley, Associate in Experimental Neurology, Johns Hopkins University, former Assistant Resident Surgeon.

1-2.30—Luncheon at Peter Bent Brigham Hospital.

2.30-2.45—Studies on the Virulence of the Pneumococcus. Francis G. Blake, Professor of Medicine, Yale Medical School, former Medical House-Officer, Assistant Resident Physician and Resident Physician.

2.45-3—Intravenous Use of Glucose in the Treatment of Postoperative Hyperthyroidism. Emil Goetsch, Professor of Surgery, Long Island Medical College, former Resident Surgeon.

3-3.15—Angina Pectoris; Some Clinical Considerations. Samuel Levine, Associate in Medicine.

3.15-3.30—A Case of Apoplexy of the Breast. E. C. Cutler, Associate in Surgery.

3.30-3.45—Experimental Study of Cardiac Hypertrophy. George R. Herrmann, Ann Arbor, Michigan, former Medical House-Officer.

3.45-4—Experimental Biliary Fistula Via the Gall-

Bladder and Kidney. Samuel C. Harvey, Assistant Professor of Surgery, Yale Medical School, former Assistant Resident Surgeon.

4-4.15—Experimental Studies in Uric Acid Metabolism. Otto Folin, Hilding Berglund and C. L. Derrick, presented by C. L. Derrick, Voluntary Assistant in Medicine and National Research Council Fellow.

4.15-4.20—Title to be announced later. W. T. Councilman, Professor of Pathology Emeritus, Harvard Medical School, former Pathologist.

4.30-6—Tennis. Tea given by the Nurses' Alumnæ Association. Music by First Year Student Nurses.

6.30—Dinner at the Peter Bent Brigham Hospital.

8.30—Dance given by Nurses' Alumnæ Association and Resident Medical and Surgical Staff.

SATURDAY, MAY 26.

8.30-11—Surgical operations and ward visits by members of the staff. Detailed program to be found on Hospital bulletin boards.

IN AMPHITHEATRE.

11-11.15—Title to be announced later. Lewis H. Weed, Professor of Anatomy, Johns Hopkins University, former Arthur Tracy Cabot Fellow.

11.15-11.30—Home Management of Diets for Nephritis. James P. O'Hare, Associate in Medicine.

11.30-11.45—Title to be announced later. John J. Morton, Assistant Professor of Surgery, Yale Medical School, former Surgical House-Officer.

11.45-12—Calcium Metastasis; report of a Case. John A. Wentworth, Hartford, Connecticut, former Medical House-Officer and Assistant Resident Physician.

12-12.15—The Relation Between Extracranial Infections and Meningitis Serosa. Wilder G. Penfield, Associate in Surgery, Columbia University, former Surgical House-Officer.

12.15-12.30—End-Results in Pleurisy with Effusion. G. P. Grabfield, Junior Associate in Medicine.

12.30-12.45—Gastro-enterological Practice from the Fluoroscopist's Point of View. Ramsay Spillman, of Washington, D. C., former Surgical House-Officer.

12.45-1—Some Calorimetric Observations. W. S. Ladd, Assistant Physician, Presbyterian Hospital, New York City, former Medical House-Officer.

1-2—Luncheon at Peter Bent Brigham Hospital.

2—Peter Bent Brigham Hospital Baby Contest for Prize Cup.

2.45-3—Rickettsia in Relation to Disease. S. B. Wolbach, Pathologist.

3-3.15—Studies on Changes in Cardiac Size. Burgess Gordon, Resident Physician.

3.15-3.30—Explanation of Second Wind. W. B. Cannon, Consulting Physiologist.

3.30-3.45—The Rôle of Infections in Hypertension. W. G. Walker, Voluntary Assistant in Medicine.

3.45-4—Title to be announced later. Hans Zinsser, Consulting Bacteriologist.

4-4.15—The Circulation in Anaphylactic Shock. C. K. Drinker, Associate Professor of Applied Physiology, Harvard Medical School, former Medical House-Officer and Resident Physician.

4.15-4.30—Potency of Digitalis Preparations. Albert Wilmaers, Voluntary Assistant in Medicine and Belgian Relief Commission Fellow.

4.30-4.45—Title to be announced later. Harvey Cushing, Surgeon-in-Chief.

FRAMINGHAM HOSPITAL.

Dr. Edwin H. Place will speak on "Contagious Diseases" at the Regular Meeting of the Staff in Day Memorial Hall (Nurses' Home) on Monday, May 28, at 4.30 P.M. All physicians of Framingham and vicinity are cordially invited.

A. E. OWEN, *Secretary.*

ASSOCIATION OF WOMEN IN PUBLIC HEALTH.

The annual meeting of this association will be held in Boston, June 18, 1923.

A CORRECTION.

In the record of the names of Massachusetts men who served in the World War Dr. Daniel J. Ellison should have been recorded as having been called to the service in October, 1918, and continued under the rank of first lieutenant as assistant to the surgeon of the Ninetieth Infantry, Twentieth Division, Camps Servier and Wardsworth, South Carolina, until discharged in March, 1919.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces open competitive examinations for Reconstruction Aide (Physiotherapy); Reconstruction Pupil Aide (Physiotherapy).

Applications will be rated as received until further notice. The examinations are to fill vacancies in the Public Health Service and Veterans' Bureau throughout the United States and vacancies in positions requiring similar qualifications.

The entrance salaries for reconstruction aides in the Public Health Service range from $720 to $960 a year, plus the increase of $20 a month, and in addition appointees will be allowed quarters, subsistence and laundry. Reconstruction pupil aides are not required in this service.

The entrance salaries for reconstruction aides in the Veterans' Bureau range from $1680 to $2500 a year, and the entrance salaries for reconstruction pupil aides range from $1000 to $1400 a year. Where quarters, subsistence and laundry are available, a deduction of $600 a year will be made from the salary to cover same.

Competitors will not be required to report for examination at any place, but will be rated on their physical ability, and education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D.C., or the secretary of the Board of U. S. Civil Service Examiners at the post office or customhouse in any city.

SOCIETY MEETINGS.

The annual meeting of the Massachusetts Medical Society will be held in Pittsfield, June 12 and 13.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

American Pediatric Society meeting, May 31, June 1 and 2, 1923, at French Lick Springs Hotel, French Lick, Ind.; H. C. Carpenter, Secretary.

June, 1923:—Annual Meeting of the Association of Women in Public Health will be held in Boston, June 18.

June, 1923:—The Nineteenth Annual Meeting of the National Tuberculosis Association will be held in 1923 in Santa Barbara, Calif., from June 20 to 23, inclusive, in the Recreation Center.

June, 1923:—American Medical Association, San Francisco, June 25-29, 1923; Olin West, Chicago, Ill., Secretary.

July, 1923:—Massachusetts Association of Boards of Health, July 26, Nantasket; W. H. Allen, Mansfield, Mass., Secretary.

October, 1923:—Boston Health Show will be held in Boston, October 6-13, inclusive.

October, 1923:—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

For list of Officers of the Massachusetts Medical Society, see page x of the Advertising Section.